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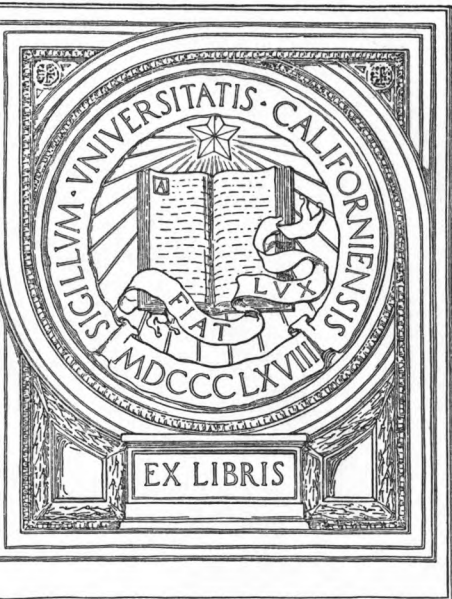
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MISSOURI STATE HORTICULTURAL
SOCIETY

Annual report.

GIFT OF
GEORGE C. HUSMANN



COLLEGE OF AGRICULTURE
DAVIS, CALIFORNIA

Sam. Fisher
See 5/32
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note on card.
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PROCEEDINGS

OF THE

MISSOURI STATE

Horticultural Society,

AT THEIR

Fourth Annual Meeting,

HELD AT ST. LOUIS, ON TUESDAY, 13TH JANUARY, 1863
AND THREE FOLLOWING DAYS.

SAINT LOUIS:
PRINTED AT THE VALLEY FARMER OFFICE.
97 Chesnut Street.
1863.

UNIVERSITY OF CALIFORNIA
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PROCEEDINGS

OF THE

Missouri State Horticultural Society.

The meeting was called to order by President Spalding. He regretted that severe sickness which had confined him to bed for some time, and from which he had just risen to attend this meeting, had prevented him from preparing any annual address.

It was, on motion,

RESOLVED, That a committee of five, of which the President shall be one, shall be appointed to memorialize the State Legislature in regard to the "Agricultural College Act of Congress," and other matters pertaining to the agricultural interests of the State.

Whereupon the President appointed Dr. L. D. Morse, N. J. Colman, George Husmann, and T. R. Allen, said committee.

The President appointed Dr. Warder and Mr. Flagg to fill up vacancies in the Committee upon Seedlings.

N. J. Colman from the Committee on Business, reported the following as the programme of business, the order of discussion under each head to be:

I. VARIETIES.—1st. For Profit. 2d. For Taste.

II. CULTURE.—1st. Propagation. 2d. Selection and Preparation of Ground. 3d. Planting. 4th. Cultivation. 5th. Pruning. 6th. Diseases.

PROGRAMME.—Apples, Pears, Peaches, Grapes, Cherries and Plums, Strawberries, Currants and Gooseberries, Raspberries and Blackberries, Apricots, Almonds and Nectarines, Quinces and Nut Trees, Timber Trees, Ornamental Trees and Shrubs.

Adopted.

It was, on motion,

RESOLVED, That at least six votes shall be required to place a fruit upon the List.

It was, on motion,

RESOLVED, That a committee of five be appointed to examine and report upon the fruit upon the tables of the Society.

The President appointed Dr. Warder, Jonathan Huggins, Rev. J. Knox, Jno. A. Pettingill and E. B. Coleman, said committee.

It was, on motion,

RESOLVED, That a committee of five be appointed to examine and report upon the wines and liquors upon the table.

The President appointed Geo. Husmann, Dr. L. D. Morse, Dr. Warder, Emil Malinckrodt, and Dr. Edwards, said committee.

It was, on motion,

RESOLVED, That the Delegates from the Illinois Horticultural Society be

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welcomed to a seat with us and invited to participate with us in our proceedings.

It was, on motion,

RESOLVED, That the Secretary be requested to procure the name and post office address of each person participating in the debates, and that a list thereof be affixed to the published proceedings of the Society.

A communication was received from the printer, giving an account of the large excess of matter in the proceedings of '62 compared with those of the former years, and asking an advance upon the price first contracted for, where it was, on motion,

RESOLVED, That a committee of three and the President be appointed to collect the money necessary and arrange with the printer.

Whereupon the President appointed Dr. L. D. Morse, Messrs. H. T. Mudd and W. C. Flagg.

The Annual Report of the Secretary and Treasurer was then read:

SECRETARY'S REPORT.

St. Louis, Jan. 13, 1863.

To the President and Members of the Missouri State Horticultural Society:

Gentlemen: In meeting here again at this, our Fourth Annual Meeting, we note with feelings of profoundest gratitude, that notwithstanding the gloom and difficulty that has surrounded every interest of our State during the past year, that there is still manifested an increasing zeal in Horticulture, and we may well suppose that it has taken such a hold upon the public mind that it must and shall progress.

This interest in Horticulture has been exhibited in a marked degree by the members themselves. The press has taken up the subject and acknowledged its importance as a great National interest, and has afforded increased facilities for Horticultural articles and notices, and especially in their very liberal notices of this meeting.

I beg to call attention to the presentation of a box of cuttings of the Powder Willow to the Society, by Mr. O. B. Galusha, Lisbon, Kendall Co., Ill., late President of the Illinois State Horticultural Society.

I take the liberty of calling attention to the fact that there are about seventy-five thousand plants at the disposal of the National Department of Agriculture; of these, there are about twelve thousand grape vines which seem peculiarly adapted to the soil and climate of our State. Hitherto, not a single plant, so far as has come under our observation, has been sent to our State, while the neighboring States have received them; and I suggest that the Department be requested to remember this Society in its distribution of favors, and as far as possible avoid making their gifts with a view to mere political effect, and as a consequence, to the entire loss of the article.

Attention should also be directed to the facilities that might be afforded by the various railroad companies to the Agents or Delegates of this and kindred Societies in their endeavours to stir up the public mind upon the important objects especially embraced in the labors of this Society. So that while these corporations will derive a large amount of benefit from whatever tends to encourage cultivation, they should throw us in the mite of free passes to the Agents of these Societies while thus engaged; as it is expecting rather too much from one set of men in their efforts for the development of our resources, that they spend their time and give so largely of their means to a cause that is at the foundation of success in railroad enterprise—this would do much to aid the Society in spreading the knowledge of Horticulture, and materially aid in the collection of information and statistics.

Words of encouragement have been received from distant members who have from uncontrollable circumstances been prevented from attending the meetings of the Society, and from some of the most distinguished Pomologists of the day; and the time is rapidly approaching when membership in this Society will take a high rank in the community, and when this Association will be regarded as one of the grandest agents that exists in working out the

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great future of our State. The culture of the soil being the foundation of all true greatness.

It is much to be desired that the members take an active interest in the operations of the Society, by collecting facts and statistics, and bringing to notice new, seedling or unknown fruits and plants, during the interim of the meetings of the Society. This would give a zest to the Annual Meetings, and keep the operations of the Society before the community by living, ever-acting energy. And in aiding to give embodiment to those labours, the Secretaries would take the greatest pleasure.

It is a matter of regret that the Society has thus far neglected or failed to call into active operation an element in Society which has crowned every movement with which it has been identified with success; one that regulates popular will alike in the household and on the street; one that was the first and has been the most active agent of the Prince of Peace, and has mitigated the horrors of War. Why should we longer neglect to avail ourselves of the powerful aid of WOMAN in promoting the cause of Agriculture? She loves it; she gives grace to it; it is like her. Without woman to partake of its excellencies, what is the value of a fruit to us either on a market or amateur list; either for cooking or dessert; it is in fact raised for, and receives its value from the ladies; and yet our meetings would indicate that they were ignored; that the members of the Missouri State Horticultural Society had neither mothers, wives, sisters, daughters or sweet-hearts—were in short, a crowd of barren-souled creatures, whose life was taken up in planting, tending and discussing the merits of a parcel of rods. We suggest that arrangements be made to enable us to have a large supply of ladies' sweetenings to check any tendency to acerbity in all our future meetings.

The names on the books of the Society are 108, of course many of these are anything but active members.

During the past year communications were sent to every member not at the last Annual meeting, to which some responded, while others did not; and some from inability to attend withdrew their names altogether. Among those who promptly manifested their devotion to the objects of the Society, were the Hon. Judge Wells, Jefferson City, and W. L. Irvine, Esq., of Buchanan. Every member of Committee was duly notified of his appointment, and all reminded that the proceedings of the Society would be published in the "Valley Farmer."

The amount of fees collected during the past year was thirty-three dollars. All of which is respectfully submitted, Wm. Muir.

It was, on motion,

RESOLVED, That a committee of three be appointed to recommend a list of pears for general cultivation, for market, and for amateur culture, as standards and as dwarfs.

Whereupon the President appointed John A. Pettingill, Dr. Claggett and Mr. Geo. Barry, said committee.

The special order being for Election of Officers for the ensuing year, the President appointed Mr. Bayles and Dr. Claggett tellers.

It was, on motion,

RESOLVED, That the State having been recently re-districted, so much of the Constitution as states that there shall be a Vice-President from each congressional district, be repealed, and that the Society shall elect five Vice-Presidents.

After the ballot for President had been declared, it was, on motion,

RESOLVED, That a committee of three be appointed to report the remaining Officers.

Whereupon the President nominated Messrs. N. J. Colman, W. C. Flagg and Dr. Edwards, which report being adopted, the following persons were declared the officers of the Society for 1863:

PRESIDENT—Henry T. Mudd, St. Louis.

VICE-PRESIDENTS—Dr. B. F. Edwards, St. Louis; Geo. Husmann, Hermann; O. H. P. Lear, Hannibal; Isaac Snedeker, Jerseyville, Ill.; Wm. Hadley, Collinsville, Ill.

CORRESPONDING SECRETARY—Dr. L. D. Morse, Allenton, St. Louis Co.

RECORDING SECRETARY AND TREASURER—Wm. Muir, Laborville, Fox Creek P. O., St. Louis Co.

Mr. Bates, of the Museum at Wyman's Hall, sent a special invitation to the members of the State Horticultural Society to visit his Museum free of charge.

It was, on motion,

RESOLVED, That we adjourn for two hours to visit the Museum, and return our heartfelt thanks to Mr. Bates for his kind consideration of the Society.

It was, on motion,

RESOLVED, That a committee of three be appointed to prepare a list of grapes for the Society.

Whereupon the President appointed Messrs. Heaver, Husmann and Knox.

It was, on motion,

RESOLVED, That Dr. Warder, of Cincinnati, Mr. Heaver of Cincinnati, and Rev. J. Knox, of Pittsburgh, be elected Honorary Members of the Society.

It was, on motion,

RESOLVED, That the President appoint the following committees, each to consist of three members, to report to the next Annual Meeting, viz:

A Committee upon the best variety of Apples for general cultivation.

"	"	"	Pears	"	"
"	"	"	Peaches	"	"

A Committee upon the best variety of Cherries and Plums for general cultivation.

A Committee upon the best variety of Strawberries and the best mode of cultivation.

A Committee upon the best varieties of Grapes, with the mode of cultivation and pruning.

A Committee upon the time and manner of pruning Apple and Pear Trees, distinguishing between the relative merits of summer and winter pruning.

A Committee upon pruning the Peach and Cherry Tree.

A Committee upon the most successful Ornamental, Deciduous and Evergreen Trees and Shrubs; their planting, pruning, cultivation, and best management in ornamental grounds.

The Agricultural Committee Report in favor of petitioning the Legislature of the State:

First, to accept the conditions of the Agricultural College Act of Congress.

Second, to pass an act to establish a State Board of Agriculture.

Third, to appropriate one hundred dollars for the purpose of aiding to publish and distribute the proceedings of this Society.

Adopted and referred back to Committee for the necessary action.

It was, on motion,

RESOLVED, That Dr. Claggett be requested to prepare a report upon his experiments in regard to the time of the year in which the operation of healing over wounds is most successfully performed.

The Chairman presented the following

REPORT OF FRUITS ON THE TABLE.

By W. C. Flagg—Procured from Hollister & Co., of Alton, Western New York, Apples: Rhode Island Greening, Swaar, Westfield, Seek-No-Farther, Black Gildflower, Talman's Sweeting; Baldwin, very small; Roxbury Russet, small and slightly russeted. All these fruits are remarkable for their solidity, less size, greater color, and less roughness than those usually grown in this latitude. From his own farm: Pryor's Red, a great favorite.

By Philip Tippet—Yellow Newtown Pippin, Pryor's Red, Janet, Esopus Spitzenberg, Lansinburg—the last valuable only as a long keeper.

By N. J. Colman, for the following: Fred Wills—A large pale apple, said to be a seedling; it is rather coarse, acid, and little better than Monstrous Pippin. Wm. Russell, Ironton—Janet, Pennock. Cyrus Russell—Newtown Pippin, Gilpin, Yellow Belleflower, Esopus Spitzenberg, Maryland Red Streak; Cabin, a new apple, promising well as a long keeper.

By the President, (from the north or east.)—Talman's Sweet, fine specimens.

By H. T. Mudd, (Lady,)—Campfield, and another unknown.

By Jno. A. Pettingill—Yellow Belleflower; Pryor's Red, good; Janet; Gilpin; Esopus Spitzenberg, thought to be Red Lady Finger, of Central Illinois, or Red Winter Pearmain, a Kentucky sort; Newtown Pippin, yellow; Milam; English Golden Russet; Roxbury Russet; Pennock; American Pippin; Winter Nonesuch, globular, conical, medium, striped, pale red, flesh tender, fine grained, yellowish, juicy, sub-acid, very good; Baldwin, not correct, not known, very tender, juicy, almost melting, and very good—may be Red Canada; Tulpahocken, an ovate, pale, yellow fruit, unknown.

By J. A. Warder—A gathered collection, chiefly from Indiana and Ohio: Aunt Hannah, not recommended, but showy.

Pryor's Red, from Central Indiana; rich lands; very highly colored on russet, very good.

Pickard's, a new apple of large size and good appearance, quality quite good, nearly as good as Peck's Pleasant.

Winter Green, a new apple from Indiana, appears to be a great keeper.

White Pippin, handsome specimen of this valuable market fruit.

Michael Henry, very productive—a market fruit of little character beyond sweetness.

Henwood, a new apple, resembling both the Ortley and the Yellow Belleflower fine size and appearance, quality very good. Season from December to March, and keeping longer if desired.

Dr. Watson, often called Autumn-Seek-no-Further in Indiana, a most delicious table apple for September, and until December—one of the most delicate and beautiful dessert apples in cultivation, should be better known.

Yellow Newtown Pippin, a standard variety which always looks well in this region.

Green Newtown Pippin, a good apple.

Kaighn's Spitzenberg, one of Cox's old favorites, not very valuable.

Nickajack, a new southern variety, long cultivated along the Ohio river, but not generally known. This is very productive and a good keeper, valuable for market and for the kitchen—the Carolina at Louisville, Ky.

Jersey Black, a sound, fair fruit, bearing well and never without fruit—quality good.

Farley Red, a new southern apple of great market properties, rather small, but fair and exceedingly productive, and a great keeper.

Indiana Favorite, medium or above, very regular, globular oblate, bright red, handsome, sound, a good keeper; quality good to best—from Eastern Indiana.

Winesap, a universal favorite for market.

Rawles' Janet, of fine size, though grown in Southern Indiana, it is almost worthy of its Missouri cousins.

Peck's Pleasant, a great favorite where known—ripens too early for this latitude.

Moore's Sweeting, a long keeper—for baking in the spring.

Ladies' Sweeting, a handsome fruit, the great favorite of Chas. Downing—large, handsome, productive, tender, juicy, sweet—very good.

Transport, an Indiana variety.

Clayton, a new apple from Clayton, Hendricks Co., Ind. Good size and color, keeps well.

American Golden Russet, fair specimens of this delicious table fruit, which is unprofitable for market.

By Jno. R. Woods :

Willow Twig, or James River; large, handsome; a productive and healthy tree; keeps unusually well; very profitable.

American Pippin, or Grindstone; a long keeper, of poor, dry flesh.

Also, from Miss M. C. Woods, a quince believed to be of the Anger's variety, in fair state of preservation.

By Mr. Redfield :

Baldwin; Esopus Spitzenberg, fine; New York Pippin; Janet.

By T. R. Allen, Allenton, Mo. :

Yellow Newtown Pippin, fine; Ortlew, large; Janet, very fine; Priestly, large, fair, but not admired; Penneck; Winesap, very fine; American Golden Russet, is Roxbury.

By Dr. Claggett :

Yellow Belleflower, fine. A russet, unknown. A striped fruit, supposed to be the Large Striped Pearmain of Kentucky.

Pears: Vicar of Winkfield.

By Mons. Jno. Vallee :

Tulpahocken, or Fallawalden; Gilpin.

Unknown; long and short, often lop-side, red striped, pale yellow flesh, acid; grown from the sprouts.

Unknown; oblong, regular, large, yellow green, not smooth; promises well for market,

By Bayles & Bro., Carondelet :

White Pippin.

It was, on motion,

RESOLVED, That Dr. Warder be requested to draw up a list of Sweet Apples to be appended to the list of the Society.

The Chairman presented the following Report of Committee on Seedlings:

Aunt Susan's Favorite—raised from seed, planted by Mrs. Susan Tippet, about twenty-five years since. Tree, hardy and thrifty grower, a good and regular bearer; fruit large; form, roundish, flattened; color, light yellow, faintly striped with red, with a red blush on the side exposed to the sun, with deep red stripes; stem short; cavity deep; calyx closed; flesh, white, juicy, mild and sub-acid; first to middle of August—foliage, dark green and very heavy.

By Fred Wills :

A large pale apple, said to be a seedling; it is rather coarse, acid, and little better than the Monstrous Pippin.

By Dr. Claggett :

Apple not known, somewhat resembles Cannon Pearmain.

Pickard; a new apple of large size, as good as Peck's Pleasant, which it resembles.

Henwood; a new apple, resembling both Ortlew and Belleflower, keeping from December to March.

Clayton; a new apple from Clayton, Ind.

By Mr. Malinekrodt :

Unknown; of medium size, red striped on yellow ground.

By Mr. Valle :

An apple above medium; oblong; yellow green; promises well for market.

Respectfully submitted, J. B. H. BEALE, Ch.

The Committee on Pears presented their report, which was, on motion, appended to the List of Fruits.

Mr. Knox was requested to prepare a list of Strawberries to be added to the List of Fruits.

It was, on motion,

Resolved, That a committee of three, of which the President shall be one, be appointed to attend to the publication of the proceedings of this meeting and to collect the donations that have been made for that purpose.

The committee was then appointed as follows: President, H. T. Mudd, N. J. Colman, Dr. Edwards.

The chairman presented the following report of Committee on Wines :

REPORT OF THE COMMITTEE ON WINES.

The Wines on the table were tested by the committee in the manner of an imaginary scale, which each member bore in mind, 100 being the maximum, or the best wine ever tried, and 50 the minimum. What was under 50 was considered unworthy of mention. Each member notes down his number, they are afterwards compared and the (average) medium number of each sample is adopted. The samples number as follows :

No. 1, Concord, Wm. Poeschel, Hermann,	1862, 72 1-7
" 2, " J. S. Seymour, Eureka, -	" 70 5-7
" 3, Herbemont, F. Noe, Hermann, -	" 66 6-7
" 4, " Wm. Poeschel, Hermann,	" 74
" 5, Catawba, John F. Walter, St. Louis Co.,	1860, 68 4-7
" 6, do Michael Poeschel, Hermann,	1862, 73 4-7
" 7, do Frederick Noe, do	" 70
" 8, do Wm. Poeschel, do	" 74 4-7
" 9, Norton's Virginia, Fred. Noe, do	" 78 1-7
" 10, do Michael Poeschel, do	" 77 4-7
" 11, do Wm. Poeschel, do	" 82 1-7
" 12, Clinton, Samuel Miller, Labanon, Pa.	" 71 3-7

Nos. 13, 14, were samples of so-called Sorghum Wine, but of very inferior quality.

No. 15, also called wine, was a very insipid Syrup of the same cane, ruled out.

No. 16, Cider Apples exhibited as Bastard Jeneton; too little fermented to form a correct judgment; only two votes, - 15 5-7

No. 17, Cider, Dr. Stevens, 1860, very fine, - 80 5-7

The Wines would rank in merit as follows :

No. 11, Norton's Virginia, Wm. Poeschel,	No. 1 best
" 9, " " F. Noe, -	" 2
" 10, " " M. Poeschel, -	" 3
" 8, Catawba, Wm. Poeschel, -	" 4
" 4, Herbemont, do -	" 5
" 6, Catawba, M. Poeschel, -	" 6
" 1, Concord, Wm. Poeschel, -	" 7
" 12, Clinton, Saml. Miller, -	" 8
" 2, Concord, J. S. Seymour, -	" 9
" 7, Catawba, F. Noe, -	" 10
" 5, do John F. Walter, -	" 11
" 3 Herbemont, F. Noe, -	" 12

Three samples more were tested next day :

No. 18, Native Wine, so-called, found to be must of the wild grape, sweetened with sugar, which was ruled out for that reason.

No. 19, Catawba, John F. Walter, promising well, but in too imperfect a state, being too young to form any judgment of.

No. 20, Isabella, weak and flat, but perhaps as good as can be made from that grape.

Your committee would here state, that the great majority of the samples of wine were yet too new to be fairly tested, and would perhaps have ranked

higher if more developed; the result they consider as highly creditable as fine a collection of wines, with but few exceptions, as could be expected in any table.

There were a number of samples of so-called wine, made from Blackberries, Raspberries, Gooseberries and Currants, which your committee, however, would recommend to be called, cordials or domestic beverages, not wines. Wine we consider the pure fermented juice of the grape, with any addition whatever. Whereas, these drinks, even in their most innocent form, are made by adding a large quantity of water to the juice of the fruit and then adding a large quantity of sugar. A great many vilify them farther by adding brandy. They contain neither tartaric acid or grape sugar which are essential elements in true wine. Of the samples presented, several of the currants were considered very good; as also one sample of Strawberry one sample of Blackberry, of which fruit there was the largest number, was also fair.

Your committee regret to be unable to make a more minute report on these drinks, in consequence of some of the members having resolved themselves into a committee of the whole, and opened and tried them before they were placed in the hands of the committee. We would also respectfully suggest that in future, these samples be tried in a separate room. Your committee would also recommend the following resolution:

RESOLVED, That the Wine Growers of Missouri, be requested to send specimens of wine to the department of Agriculture, Washington, D. C., marked, care of Isaac Newton, Commissioner. The object is to have them analysed chemically, and reported on by the Department. GEO. HUMANN, Ch.

It was, on motion,

RESOLVED, That this Society tenders its thanks to the proprietors of the Planters' House, Barnum's Hotel, and Olive Street House, for the hospitality they have extended to a number of our members visiting us from other States.

The Illinois, Indiana, and Ohio Delegations, desire the Secretary to read to the Missouri State Horticultural Society the following resolution, as the unanimous sentiment of said Delegations:

RESOLVED, That the Illinois, Indiana and Ohio Delegations hereby express their grateful appreciation of the manner in which their members have been received and cared for by the members of the Missouri State Horticultural Society, and the citizens of St. Louis, and all ask the opportunity to reciprocate these attentions and courtesies.

President Spalding introduced the new President to the Society, and thanked the Society for their orderliness, kindness and the support he had received.

President Mudd, on taking the chair, returned thanks for the honor, and hoped the Society would excuse him from any address at this time.

President Mudd announced the following committees:

APPLES—Jno. R. Woods, Alton, Ill.; Dr. C. W. Spalding, St. Louis; W. C. Flag, Moro, Ill.

PEARS—Wm. Muir, Fox Creek, Mo.; Dr. B. F. Long, Alton, Ill.; Wm. Glasgow, Jr., St. Louis, Mo.

PEACHES—Wm. Hadley, Collinsville, Ill.; Col. A. Bainbridge, De Soto, Mo.; Dr. Hull, Alton, Ill.

CHERRIES AND PLUMS—E. Malinckrodt, St. Louis; J. V. Hopper, Bunker Hill, Ill.; Dr. A. W. McPherson, Allenton, Mo.

GRAPES—Geo. Humann, Hermann, Mo.; Jno. A. Pettingill, Bunker Hill, Ill.; Dr. B. F. Edwards, St. Louis, Mo.

STRAWBERRIES—Carew Sanders, St. Louis, Mo.; E. R. Mason, St. Louis, Mo.; F. A. Quinette, St. Louis, Mo.

ON PRUNING APPLES AND PEARS, distinguishing between the merits and objects of winter and summer pruning—Dr. H. Claggett, St. Louis; Isaac Snedeker, Jerseyville, Ill.; J. Bateham Huggins, Woodburn, Ill.

ORNAMENTAL EVERGREENS and Deciduous Ornamental Trees, Planting, Grouping and Cultivation—Geo. M. Kern, Alton, Ill.; N. J. Colman, St. Louis; K. H. Fell, Bloomington, Ill.

RESOLVED, That the thanks of the members of this Society are hereby tendered to the Commissioners of the county of St. Louis for the use of the Land Court Room, for holding their meeting, and also to Mr. Jas. Quigley, the gentlemanly Janitor, for his services and attention during the session.

RESOLVED, That the Missouri State Horticultural Society, anxious to gather all the information possible as to the relative value of fruit trees for orchard purposes, grown upon seedling stocks and those grown by grafting upon sections of roots, would invite all Fruit Growers being in possession of facts relative thereto, to communicate the same to the President of this Society during the present year.

RESOLVED, That the President appoint a delegation of five members to attend the State Fair to be held at Rockford, and the Annual Meeting of the Illinois Horticultural Society.

RESOLVED, That we recommend the appropriation by Congress of means sufficient to establish and maintain an experimental Fruit and Vegetable Garden at or near Washington, D. C., under the direction of the Commissioner of Agriculture, from which Department we, as Horticulturists, entertain the highest hopes of good to this great interest in the agriculture of our country.

The following Lists of Fruits were adopted seriatim, and the discussions will show that many good fruits were not placed upon the Lists, not so much because of any doubt upon the fruits, but because the members had not sufficient personal experience with these fruits in the more immediate range of the operations of the Society.

It is also worthy of note, that a fine collection of native nuts, including those of the Water Chinquapin, were presented by Mr. Jewett of Pevely, Jefferson Co. And also seven varieties of Willow by Mr. Jonathan Huggins, Macoupin Co., Ill., which with the box of Powder Willow sent to the Society by Mr. O. B. Galusha, of Lisbon, Kendall Co., Ill., were distributed among the members.

The following List of Fruit was adopted :

APPLES.

Early Harvest, Red June, Red Astrachan, Hightop Sweet, Maiden's Blush, Fall Queen, Rambo, Pennsylvania Red Streak, (or Wine,) Fallawalden, Rome Beauty, Pryor's Red, Michael Henry Pippin, Newtown Pippin, (on limestone soil with good cultivation,) New York Pippin, Smith's Cider, Wine Sap, Rawles' Janet, Willow Twig, Gilpin.

PEACHES.

Troth's Early, Large Early York, Crawford's Early, Bergen's Yellow, Old Mixon Free, President, Newington Cling, Magnum Bonum, Stump the World, Washington Cling, Crawford's Late, Columbia, Heath Free, Heath Cling, Smock's Free.

These are given as nearly as possible in the order of their ripening.

PEARS.

Doyenne d'Ete, dwarf; Madaleine, standard; Tyson, dwarf; Dearborn's Seedling, dwarf; Bartlett, standard only; Louise Bonne de Jersey, dwarf; Des Nonnes, dwarf; White Doyenne, dwarf or standard; Duchess d'Angouleme, dwarf; Belle Lucrative, dwarf; Seckel, standard; Buffum, standard; Swan's Orange, dwarf; Beurre d'Anjou, dwarf; Flemish Beauty, standard; Beurre Bosc, standard only; Glout Morceau, dwarf; Winter Nelis, standard; Easter Beurre, dwarf or standard.

PROMISING WELL—Beurre Clairgau, Napoleon, Howoll, Lawrence.

GRAPES.

FOR TABLE AND MARKET—Concord, Delaware, Hartford Prolific, Herbemont, Catawba.

FOR WINE—Norton's Virginia, Herbemont, Catawba, Delaware, Concord, Clinton.

PROMISING WELL—Meade's Seedling.

Lists of Grapes reported by Committee the same as the above for table, market and wine.

PROMISING WELL FOR TABLE AND MARKET—Creveling, Cuyahoga, Clara, Blood's Black, Mary Ann or North Carolina Seedling.

PROMISING WELL FOR WINE—Cunningham, Cassady, Miner's Seedling, Clinton, Diana.

CHERRIES.

Early Richmond, Morello, May Duke, Belle de Choisy.

For other fine cherries, recommended by Dr. Warder and other members, but not extensively tried in our soil and climate, see discussions.

STRAWBERRIES

Recommended to the Society by Mr. Knox, Pittsburgh, Pa.:

EARLY—Jenny Lind, Baltimore Scarlet, Burr's New Pine.

MEDIUM—Triomphe de Gand, Wilson's Albany, Fillmore, British Queen, Brighton Pine, Cutter's Seedling, MacAvoy's Superior, Moyamensing, Scott's Seedling, Vicomptesse Hericart de Thury, Duc de Brabant, Golden Seeded.

LATE—Trollope's Victoria, Kitley's Goliath, Nimrod.

LIST OF SWEET APPLES

In succession, those for stock and those for dessert marked T; for baking B; arranged by Dr. Warder for the Society:

SUMMER AND FALL—B, High-top Sweet; T, Sweet Bough; B, Golden Sweeting; B T, Victuals and Drink, Jersey Sweet; B T, Bailey's Sweet; B, Lyman's Pumpkin; T B, Ramsdel's, Fenton's; T, Dr. Watson, Molasses; B T, Fall Queen; B, Buckingham.

WINTER—Tulpahocken, Michael Henry; T B, Broadwell, Sweet Belleflower; B, London Sweet Pippin; T B, Winter Sweet Paradise; B, Ladies Sweeting; B, Talman's, Holton's, Moore's, Gilpin, Campfield; Sweet Vandervere; T, Black Gilliflower; T, Red Winter Pearmain; T B, Swaar.

CHERRIES

Recommended to the Society by Dr. Warder, as worthy of extended trial:

Gov. Wood, Cleveland, Black Tartarian, Belle de Choisy, Belle Magnifique, Elton, Early May, Yellow Spanish.

On motion, the Meeting adjourned, to meet again in St. Louis, on the second Tuesday of January, 1864, at 10 A. M.

WM. MUIR, Sec.

Report of Discussions, Essays, &c.

President Spalding introduced Dr. John A. Warder, of Cincinnati, who read a most interesting Essay upon the Van Mons theory of propagation, viz: By raising continuously from the first ripened seeds of the trees of the first ripened seeds; which was received with the most marked attention, detailing as it did the only well conducted experiments upon this theory in America, so far as is made public. We will look with the greatest interest to the time when this valuable contribution to our pomological literature will be given to the public by its indefatigable author; but we will not try to anticipate so important a document.

The President introduced Mr. W. C. Flagg, of Moro, Madison Co., Ill., whose Essay upon the Apple was in order.

AN ESSAY ON THE APPLE.

BY W. C. FLAGG, MORO, MADISON CO., ILLS.

It has been assigned to me to read a paper upon the apple: and although art is long, time fleeting and very little of it intervening between the date of this writing and the meeting of the Society, I am very glad of the opportunity of saying what I know, and somewhat that I do not, in regard to this chief of fruits.

Did time and your patience permit, it would be pleasing, if not profitable, to treat of this subject as Longfellow in his *Spanish Student* describes the "Comedies in which you see, as Lupe says, the history of the world brought down from Genesis to the Day of Judgment." For the apple is a famed fruit in mythology and history. The golden fruit of the Hesperides; the gardens of Alcinoüs, as described in Homer; the idyllic praise of Theocritus, and the pleasant pictures of Virgil's verse—though they might not point a moral, would at least adorn a tale. The Prose Edda telling us that the Scandinavian gods renewed their youth by tasting certain apples carefully kept by the goddess Iduna, has given an old Norse prestige to our favorite fruit. The poetry of our English ancestors, as well as their prose, has much to say in praise of the apple, as the reader of Irving and other writers on ancient customs will remember. But these reminiscences so pleasant to the antiquarian and scholar, we must omit for more practical and profitable considerations.

Botanically the apple is a species (*malus*) of the genus *pyrus* and order Rosaceæ. It is a blood, or rather juice, relation of the pear and the crab, and not remotely connected with the chokeberry and mountain ash. The thorns and the June berry are its cousins. Its more distant family connections are with the plum, the apricot, the cherry and the peach on one hand; and with the strawberry, the blackberry, and the raspberry on the other. It is not only a very meritorious fruit, but has the good fortune to be well connected.

Its geographical distribution, which is a very interesting subject for consideration, I can find but few facts concerning. Kenrick says, "the apple is said to flourish in every part of the United States except the lowlands of the maritime districts of Carolina, Georgia and Florida, and the low prairies or savannas bounding on the Gulf of Mexico." On our own continent it is grown certainly so far North as Maine on the Eastern Coast, and Oregon on the West; and so far South as Georgia. I have before me a list of fruits for Maine under latitude 44°, and for Georgia under latitude 34° North, one recommended by

the Board of Agriculture in Maine in 1860, and the other by noted Horticulturists of Georgia in 1858. It is notable that but one apple (the American Summer Pearmain) is found on both lists. Of this fact more hereafter. Humboldt, in his *Travels*, mentions that apples were grown at Caraccas, on the North Coast of South America, about 10° north latitude; but makes no mention of their quantity or quality.

In the old world we know that the apple grows in Sweden and Russia; though to what extent I cannot say—and is common in England, Germany and France. They are said to be brought into Egypt and Palestine from Damascus, which has the name of being an excellent region for fruit. This would give a range from 33° to 56° of north latitude. In the Southern Hemisphere, from the configuration of continents, little land lies farther from the Equator than 30°, and presumption is that the apple will not find there a very congenial home.

In this connection comes the practical question, what is the best latitude for apples—a question which I shall not attempt here to solve, but which is one, as it seems to me, of much importance to the many now seeking suitable sites for commercial orchards.

Another practical consideration is, what varieties are suited to a given climate. I see, or think I see, a tendency among varieties of apples to succeed best in the latitude, or rather on the isothermal line in which they originated. Thus, as I have noted, only one Maine apple is put on the list for Georgia.—Downing gives a list of 25 apples for the North, and of 31 for the South and South-west, 3 of which (the Red Astrachan, Porter and Gravenstien) are common. On the other hand, of 12 varieties recommended by this society, last winter, as thoroughly tried and approved in this region, 6 are natives of New Jersey, 2 of Virginia, 1 of Delaware, 1 of Carolina, 1 of Long Island, and 1 unknown. It will be observed, however, I think, that varieties from the South succeed better in Northern climates, than Northern apples in Southern. Thus, in the list above mentioned, we have the Carolina Red June, Pryor's Red and Rawles' Janet, introduced from a Southern latitude; and the Newtown Pippin, and perhaps Early Harvest, from a Northern. The former are much the hardiest, most vigorous and productive.

These are only suggestions, and a much more extended proof from facts would be needed to give them practical weight.

The usual age of the apple, according to Downing, is 50 to 80 years; but he mentions two in Rhode Island aged 130 years, and measuring 12 and 13 feet in circumference. Elliot affirms that trees 1000 years of age are on record, and that there are those of over 200 years, healthy and producing fruit in this country. A writer in the "Valley Farmer" during the past year mentions trees in Kentucky of the age of 71 years, still vigorous and bearing annual crops. The oldest trees I have seen in Illinois were not over 60 years of age, and were generally in a very decrepit condition. My own trees, the oldest of which are 40 years old, have mostly succumbed to the infirmities of age and the hard winter of 1855-6. Of 300 seedling apple trees set out in the spring of 1822, 120 or about 40 per cent. were living in 1862. Of 217 grafted trees set in the fall of 1822, 86 were living in 1862 or about 40 per cent. The longevity of seedlings and grafts was the same, which is contrary to general opinion.—Of the grafted trees, the longest lived and healthiest, placing the best first, are the Pryor's Red, Kirkbridge White, Newtown Pippin. The trees of these living are of the Pryor's Red, 55 per cent; of the Kirkbridge White, 60 per cent; and of the Newtown Pippin 57 per cent. Considering these and other facts which have come within my observation, I have sometimes thought that the extremes of our climate, and still more our retentive sub-soil, will make the days of all orchards in this region few and full of trouble—as well as fruit. On the other hand, it is very probable that in a climate and soil which brings orchards into bearing with such rapidity, it may be the true policy of the orchardist to raise all his fruit on young trees and not spend his time in the less profitable task of renovation. The fruit of young trees is finer than that of old: and I should say, that, as a rule, after a tree becomes 25 years old, its place should be supplied by a younger. Let a man plant an orchard every ten years, and he can have a perpetual supply of fruit from young and vigorous trees.

The varieties of the apple are 2000, according to Elliot. Downing enumerates about 600, whereof some 75 are first-rate, 400 second-rate, and 125 third-rate. One hundred varieties will include, I think, all the really desirable sorts for any one locality. Ten of these one hundred will probably be enough for a market orchard.

In the selection of varieties, regard must be paid to the purpose of the orchard. I may be willing to raise a favorite fruit at a positive pecuniary loss for my own gratification—I will hardly do so for others. Hence, we have lists for profit and for taste.

Of the latter I cannot say much discreetly, I will venture the following list, covering the season, which in my own experience, (which is limited in varieties,) I have found best:

1, Early Harvest; 2, Large Yellow Bough; 3, Carolina Red June; 4, American Summer Pearmain; 5, Porter; 6, Fall Wine; 7, Rambo; 8, Yellow Belleflower; 9, Pryor's Red; 10, Winesap; 11, Newtown Pippin; 12, Rawles' Janet.

I name the last because I know of no better late keeper, not because I reckon it a first-rate apple.

In making a selection of varieties for profit, the matter becomes more difficult, as a great many new considerations must come in. In the selection of market fruits we must regard:

1. The demands of the market, or markets. 2. The means of transportation. 3. The competition to be met.

These limitations will exercise a general influence over our choice. If those who buy our apples want the Janet, it is best to raise it. If the transportation is over long or rough roads, we must select the tougher-skinned and firmer fleshed varieties. If we must meet competitors from other regions, we must give them place where they excel us, and take place where we can excel them.

Considering the matter more in detail, we must look for good qualities for market purposes in the trees and in the fruit.

The trees should be: 1, hardy; 2, early in coming into bearing; 3, productive; 4, of good shape for picking.

The fruit should be: 1, bright in color; 2, of good and even size; 3, of fair quality; 4, even in ripening; 5, hanging well to the tree; 6, firm for carriage. These ten good qualities of tree and fruit are difficult to find in one variety.

We can at most approximate by choosing varieties, having as many good qualities as possible. Supposing each of these qualities to be equally valuable, a perfect apple on this scale would be marked ten. I think the Rawles' Janet could be almost placed there. The Winesap fails only in size, and might be marked nine. The Red June fails in size and ripens unevenly, and might be marked eight. The Gilpin fails in size, the shape of the tree, and perhaps in quality, which would reduce it to seven.

This method of selecting varieties, when you have sufficient reliable data, is necessarily the best. If you know what qualities are wanted, and what apples have them—the question is settled.

In want of sufficient data, a good method is to collect the suffrages of fruit growers of experience. Get A to make out the list that he believes best, and B and C to do likewise; and with care in the selection of your advisers, you can make out a very good list. I have here the suffrages of fifteen fruit growers. I give the result of the vote, premising that two are from St. Louis, six from the region of Alton, two from Central Illinois, three from Northern Illinois, one from Cincinnati, and one from Indianapolis. Of these fifteen, 11 are for the Early Harvest and Rawles' Janet; 9 for the Winesap; 7 for the Carolina Red June, Maiden's Blush and Rambo; and 6 for the Keswick Codlin, Red Astrachan, Willow Twig and Gilpin. An orchard, therefore, selected on strictly mathematical principles, would contain (multiplying the votes for each apple by 10:)

110 Early Harvest, 70 Carolina Red June, 60 Red Astrachan, 60 Keswick Codlin—summer, 300.

70 Maiden's Blush, 70 Rambo—autumn, 140.

90 Winesap, 110 Rawles' Janet, 60 Willow Twig, 60 Gilpin—winter, 320; 760 trees.

I have seen worse lists than this. In my own experience I have found the

following apples good for market; 1. The Early Harvest, which, though a shy bearer and not a healthy tree, will always sell, by virtue of its earliness, at remunerative prices. It has been ready for market with me at the following dates:

1857, July 15th; 1858, June 26th; 1859, July 2nd; 1860, June 28th; 1861, July 12th; 1862, July 8th.

Another and peculiar virtue of the Early Harvest is its evenness in ripening; nearly all the early apples I am acquainted with, fail in this respect. The Red June and Kirkbridge White will ripen fruit for from four to six weeks, a very desirable quality for the family, but making a good deal of extra work in a market orchard. This apple has about eight points in its favor.

2. The Carolina Red June, which succeeds the Early Harvest and extends through the season of the two succeeding. An apple of fine color and of good quality for an early apple; but rather small, and of late years in this region, not so fair as it used to be; many condemn it, as I think prematurely. I rate this fruit at eight.

3. The Early Strawberry, a fine colored fruit; a most vigorous tree, with long slender branches, which are quite inconvenient to pick from; and very productive. It does not hang well to the tree. Would rank about eight on the scale.

4. The Sine qua non has proved with me a good market fruit. It excels other early apples in size, although not in color; is productive, with a healthy tree and fair fruit. It is rather too tender for shipping, and not of a good color at the time it must be picked; would rate it about eight on the scale of ten.

5. The Kirkbridge White is notable as a very early bearer, and very hardy and productive tree. Its size and color are against it as a market fruit; but it covers its few sins by its productiveness. It is a summer "dollars and cents." Has seven of the ten good points.

6. The Summer Queen, which I find recommended by nearly every one as a market fruit, has not proved a hardy tree with me. It bears well and produces very beautiful and showy fruit, of a flavor too coarse and rank for my own liking; would give it about seven points.

After the Summer Queen comes a void in my list of market apples, which I have not yet seen satisfactorily filled. I am trying the American Summer Pearmain, the Porter, and the Benoni. Dr. Warder recommends the Trenton Early. I think it should be the aim of the owner of a commercial orchard to furnish a succession of fruit through the season. This keeps him before the public without intermission, which is quite a consideration with a business man, and keeps the labor and utensils invested in constant or partial employment.

7. The Rambo is the next apple I have to notice. My own experience has not led me to rate it very high as a market fruit. It is not hardy or of good shape for picking, and in productiveness and size of fruit, is not first-rate. I would not reckon it higher than six or seven.

8. The Wine, Hay's Winter, or as I best know it, Pennsylvania Red Streak, is a most productive tree and bears fine fruit. The tree is not so hardy as I could wish, and the fruit is a little tender for shipping. Would rate it eight on the market scale.

9. The Yellow Belleflower with me, has been late in bearing, and drops its fruit unless picked early. It is a little tender for carriage. I will rate it eight on my soil.

10. The Pryor's Red I have seen a good deal of. It has a very thrifty, vigorous tree, of rather too upright a growth for good picking. The fruit does not hang well on the tree, and is not very productive. Rate it at seven as a market fruit, although to my own taste it is perhaps the best apple in my knowledge.

11. The Newtown Pippin I have tried extensively. It is late coming into bearing, not very productive, much of the fruit is small, and its drops unless picked early. Perhaps it may rate seven as a market apple, though six is nearer my convictions.

12. Rawles' Janet has no positive faults and many virtues. It makes one of the best shaped trees I know of. It won't blossom until the late frosts are over. It bears large crops year after year. In 1856 I gathered 600 bush-

els of saleable apples from an acre of 50 trees, 14 years planted. It will freeze on the tree, thaw out and be rather improved than otherwise by the operation. It will not taste badly in early winter, or even in the fall, as an eating apple, and will keep until June.

13. The Gilpin is strong in its hardiness, productiveness, and firmness of its fruit. The tree is of bad shape for picking, and the fruit is decidedly too small. It will rate about eight upon my list.

In conclusion of this branch of the subject, I present a list of varieties which experience, observation and the report of others, leads me to believe would succeed in this part of the country as market fruits :

Early Harvest, Keswick Codlin, Red Astrachan, Deterding's Early, Early Strawberry, Sine-quanon, Carolina Red June, Kirkbridge White, Summer Queen, American Summer Pearmain, Benoni, Trenton Early, Gravenstein, Maiden's Blush, Buckingham, Rambo, Hubbardston's Nonesuch, Wine or Pennsylvania Red Streak, Yellow Belleflower, Fulton, Domine, Fallawalden, Rome Beauty, Pryor's Red, Jonathan, Ortley, White Winter Pearmain, White Pippin, Smith's Cider, Winesap, Michael Henry Pippin, Yellow Newtown Pippin, New York Pippin, Rawles' Janet, Willow Twig, Nickajack, Gilpin.

This list I think embraces nearly all the apples which have proved and promise to be profitable market varieties in this region—though none but a very large orchard should contain so many varieties for profit.

It may be proper to make a few general remarks on Propagation, Selection and Preparation of Ground, Planting, Cultivation, Pruning, Diseases and the Preservation of Fruit, though these, of course, can be but glanced at, and I hope may be treated of more fully by those better prepared to speak on the subject.

Propagation I shall only look at with reference to varieties. It is the opinion of some that budding and top grafting are especially valuable for certain varieties. Mr. Edwards of northern Illinois, stated in 1856, that he had found the Yellow Belleflower and the Rhode Island Greening much more productive when budded than when root grafted. Mr. Huggins would bud the Fall Pippin high. Mr. Mudd at our meeting last winter stated that budded Belleflowers in a friend's orchard at Peoria were much the most productive. A. S. Coe, of Port Byron, says that with him the Rambo should be budded or top grafted standard high, whilst the Rawles' Janet should always be root grafted. S. G. Minkler finds no difference between top grafted and root grafted Belleflowers. Some suppose the Early Harvest is more successful as a budded tree. My own experience has not made me favor trees budded or grafted high—I would rather start their limbs low. A good graft in the collar of a seedling, of a year old, grown from the seed of a hardy, vigorous variety, I should regard as best.

In the selection of ground I prefer old ground to new; high land to low; rolling land to flat land; where there are no large hollows running North or Westward. In the matter of aspect, I should not be nice, I think it makes but little difference. As to the preparation, I have succeeded well enough with ground in ordinary cultivation. The fashion, or perhaps I should say the theory, now-a-days, is to plow lands of the same width as the intended distance between your rows, leaving a dead furrow where the row is to stand—then sub-soil the dead furrow; then back furrow into the dead furrow, throwing up a ridge over it, in which the trees are planted. This may be injurious in leaving a trough of water under the rows of trees, unless you sub-soil the whole ground to at least an equal depth.

In planting, thirty feet is the most approved distance. A. R. Whitney, of northern Illinois, plants trees at a distance of sixteen to twelve feet, however; root prunes half the rows and throws the trees into early bearing. He thus gets remunerative crops and removes half or three quarters of the trees before the remainder in the ordinary course of growth are ready for bearing, this, or a similar method, will be preferable where land is valuable. The varieties planted early bearers, an early return desired, or the orchard on a bleak site where the trees need self protection.

The best cultivation I have found to be, is to plant the orchard with corn, giving it good ordinary attention, and being very sure to dig or hoe about the trees once in the spring and again about the first of July. This keeps up good tilth and leaves no covert for insects, especially for the borer.

Pruning now-a-days is on the homeopathic principle of little and often, or not at all. Low heads are probably being run into the ground, but I think upon the whole the new lights will do good in shortening the trunks of our wind and sun-beaten trees. Perhaps taking care to have a good strong leader and lateral shoots therefrom to start with, all we need to do is to keep out cross limbs that interfere with one another.

Diseases I must leave to those who know more of them.

As to the preservation of fruit, air-tight barrels, kept cool in a pure atmosphere, is the best ordinary method in my experience and observation.

DISCUSSIONS.

EARLY HARVEST.

N. J. Colman : I propose this variety for profit.

F. A. Quinette : I think it a poor bearer ; I have 150 trees ; it can't be shipped easily, it will do for a home market but not a distant one ; it won't ship a hundred miles in good condition. It is soft, bruises easily, and shows the bruises in 24 hours. I like the Red June much better, it bears carriage better, and, when both are in good condition, the Early Harvest brings \$2.50 and the Red June brings \$2 per bushel. The Red Astrachan is also a better market apple.

N. J. Colman : I am surprised at these statements. I cultivate both the Early Harvest and Red June, and know of a great many persons who cultivate both varieties, and the almost unanimous judgment of those who cultivate both is, that the Early Harvest is far preferable as a market variety. It certainly always commands a much higher price in market. The apple is round, smooth and fair. All the fruit ripens at once and can be gathered at one picking. The objection to its being a poor shipping fruit I never heard advanced before. Those who are cultivating it largely for that purpose in Illinois, Ohio and other places, will tell you that our friend Quinette is mistaken. I am planting this variety more largely than any other early apple for market. The Red June is a good family apple on some soils ; but ripening for so long a time in succession is a great objection to it as a market fruit.

F. A. Quinette : I have 120 trees of each, and fruited them about 20 years. The Red June has brought one-half more than the Early Harvest. If you let the June over-bear they are small. I have shipped to Chicago and they brought the same price there.

RED JUNE.

H. T. Mudd : I think Mr. Quinette's experience is far better than our opinion. I find it suits this locality ; the flavor is better than the Harvest, but taste is arbitrary. I would not plant very extensively of either.

Dr. Claggett : Is there a better apple at the time of its ripening ? And when the Harvest is acid and the June sub-acid, I prefer the latter, and it seems it cannot be re-placed by another.

L. D. Votaw : If there is one apple that I prize, it is the Red June ; it has brought more money than any other ; last year sold for 50 cents more than the Harvest.

F. A. Quinette : The Red June has been more injured by the curculio the last 2 years than before.

A. S. Redfield : Some say that the scab is customary to the Red June, others that it is only within the last 2 years that it has been bad.

RED ASTRACHAN.

N. J. Colman : This is a good market variety with the exception that it is a long time in ripening its fruit. I believe it to be synonymous with Deterding's Early Red, cultivated quite extensively on the Illinois bottoms, about 3 miles from St. Louis, by a German named Deterding. Many years ago he purchased a farm there, with a young orchard planted upon it ; when it came into bearing he found he had a large number of trees bearing an early apple, above the medium size, very fair and smooth, form roundish, tapering some-

what towards the eye, color red, with a little greenish yellow in the shade. The fruit is covered with a rich bloom. I examined the fruit carefully last summer, comparing it with the Red Astrachan, and am quite confident they are the same apple. The trees have the same habit of growth, the fruit ripens in the same way, over quite a long period. When I visited Mr. Deterding last summer, he had been over his orchard three times gathering the fruit from each tree. He had a large sheet, attached to poles at the ends; this sheet was held breast high, by two men under the tree, while a man was in the tree shaking off ripe apples, and other men under the tree pushing them off with poles. The gathering was attended with much expense, but the fruit was very showy and commanded the highest market price. My friend, Mr. Flagg, differs with me in regard to their being identical, and I have very great respect for his opinions. But my opinions are honestly formed from a careful comparison of the two varieties. I believe it to be an excellent market variety; and shall vote for the Red Astrachan being put on the list for profit.

Dr. Claggett : There is a striped apple, I think the gentleman has mistaken for the Astrachan.

Dr. Morse : There is no doubt the Astrachan is a striped apple.

F. A. Quinette : I have the striped June; the Red Astrachan is a flatter apple, more of the shape of the Newtown Pippin. I have the Astrachan, it is much like the Harvest in its form of growth.

HIGH-TOP SWEET.

F. A. Quinette : It is the best summer sweet apple we have, a large yellow apple. It brings a dollar the barrel more than any other. It bakes well, but does not stew.

President : It is the only sweet apple I have been able to get in this market.

F. A. Quinette : It ripens with the Red June, and continues along with the Red Astrachan.

H. T. Mudd : I have cultivated it in Central Illinois, it is a good grower in the nursery and orchard.

SWEET BOUGH.

Proposed by F. A. Quinette.

President : It is good to eat but not to cook.

N. J. Colman : It is too poor a bearer for profit, is late in coming into bearing; it is a splendid dessert fruit.

F. A. Quinette : In the last 5 years my Jenetons have not borne better than the Sweet Bough.

N. J. Colman : I think Mr. Quinette does not cultivate the Sweet Bough. He has reference to another sweet apple.

GOLDEN SWEET.

Dr. Morse : It is a good-size, good cooking apple; bears well generally; good as a dessert fruit.

A. S. Redfield : I have known the Golden Sweet. It is a good fruit, fine tree, grows well, sells well; it is at the head of summer apples.

Mr. Reihl : I think the apple Mr. Quinette spoke of, is not the Sweet Bough.

N. J. Colman : There is but little demand in market for sweet apples; we don't want too many of them.

President : It is the want of habit that the sweet apples are not raised or in demand, the people have been in the habit of baking sour apples, and they can't think of cooking apples without sugar, and sugar spoils sweet apples.

Dr. Morse : We should call attention to sweet apples.

DETERDING'S EARLY RED.

Proposed by Mr. Flagg.

N. J. Colman : We get a double dose of the Red Astrachan, I think, if we recommend this.

J. Snedeker : I have cultivated the trees of both varieties for several years; got the grafts seven years ago; a gentleman saw some fine fruit of what I think was Deterding's Early Red, and got some of the grafts which I grafted for him. I think the Astrachan much larger, more conical, deeper red. The Deterding's

Early Red, small, bright, but not very red; a beautiful apple. The growth of the trees are different. The Deterding rather more acid.

John A. Pettingill: I saw them in the nursery, got some of them, think there is a difference in the growth of the trees; the Deterding has more of the lateral spurs so common in seedlings.

Mr. Flagg: I have compared the Red Astrachan from two localities with the Deterding's Early from two other, and find the former a flat, short-stemmed, dull red apple, and the latter a somewhat conical, medium-stemmed, bright red apple. I think I can trace the history of this apple for 30 years in our locality. Downing says the Red Astrachan came from Sweden to England in 1816; and if this is the Red Astrachan; it must have been got from England when this was a very wild country, and very unlikely to get imported fruit trees.

N. J. Colman: Soil and location make a great difference in the appearance of fruit. The same variety grown in different soils, for instance in valleys and on uplands, is as different in appearance as though they were distinct varieties. Many fruits at the East by being removed to the West are so improved in size and appearance that their life-long friends don't know them here. The Red Astrachan grown on the warm, rich soil of the American bottom is a different looking apple from that grown on the uplands. It is true I may be mistaken in thinking the varieties identical—but I express my honest convictions.

A NEW APPLE.

Mr. Wm. G. Wright, of St. Louis Co., was called upon for an account of an apple he presented to the Society. It has been planted in his orchard about 35 years, don't know its name; have kept it over winter and till the last of July; the samples are not fair specimens, as the fruit was left out in the severe frost, and a few were gathered from the lower branches by a little girl. There is an objection to it; it blooms earlier than any other apple, and is liable to be caught by the late spring frost. They are much superior to the Jeneton. The trees were brought from France 37 or 38 years ago. There is a bottle of cider from the same apple, but too new—it makes excellent cider. It is a better cooking apple and keeps longer than the Jeneton, generally larger than the Jeneton, and bears every year, and the Jeneton only once in two years.

N. J. Colman: I have been acquainted with this apple for several years, and every one that knows it prefers it to the Jeneton.

Dr. Warder: It is new to me, am favorably impressed with it. These are not so large as some samples sent to me by Mr. Colman last year.

KESWICK CODLIN.

Jonathan Huggins: Fine, regular bearer, smooth, handsome.

W. C. Flagg: They have begun to ship it from Cobden (I am told) to Chicago.

Jas A. Bayles: There is a tree upon the Sigerson farm 15 years planted, and it has not borne a peck of fruit in that time.

EARLY STRAWBERRY.

Mr. —: I have raised it for a number of years; is an abundant bearer every other year; fine color and flavor; good for market but does not hang well upon the tree.

W. C. Flagg: I have had the trees set out about 20 years. Vigorous grower; too upright for picking easily; has the fault of dropping, but this can be remedied by picking soon; it drops as soon as ripe.

Dr. Warder: It is not very good for cooking; but little flavor; not good size. The cooks are obliged to add some condiment to give it flavor. Has made a good deal of money in Cincinnati market.

SINE-QUA-NON.

Geo. Husmann: It is very good; among all the apples I grow at the season, it seems to me there are none better; a healthy, thrifty grower; rather tender for market; the color an objection—a greenish yellow.

KIRKBRIDGE WHITE.

Proposed by Dr. Morse, for Taste.

A. S. Redfield: The apple here referred to is a seedling apple, but closely resembles the Kirkbridge White.

Secretary: This is ungrounded assertion; its history is very clear.

SUMMER QUEEN.

F. A. Quinette: It falls badly, few hang till they ripen; not high flavor; a large apple.

G. Husmann: Finds it drops; tardy in coming into bearing.

AMERICAN SUMMER PEARMAIN.

Jonathan Huggins: I have this variety, so said by Dr. Hull. It is one of my best market apples; bears well; ripens at the same time with the Red June; hardy, rather long than flat, not much acidity, rather dull red, tree between round and upright, branches rather thick, cooks well. When sugar is high it is better than the Harvest.

BENONI.

Dr. Warder: You can plant more trees upon the same quantity of ground of this variety than any other; it is one of the most delicious apples, early bearer, fine flesh, juicy. This is for Cincinnati. It ripens the first of August; may go into market in July.

TRENTON EARLY.

Dr. Warder: I fear this is like the last, not much known; it is very excellent, but few know it.

N. J. Colman: It is good, and comes into market when there is no other apple.

GRAVENSTEIN.

N. J. Colman: I have raised it; it is a very showy apple, fine quality; tree rapid grower, comes into bearing early.

Dr. Claggett: A sparse bearer.

Geo. Husmann: I find it so; tree tender.

MAIDEN'S BLUSH.

N. J. Colman: Early bearer, showy, productive; succeeds well in all parts of this State; good for market; rather tart for dessert.

F. A. Quinette: Good market apple for its season.

BUCKINGHAM.

Geo. Husmann: Is this the Fall Queen, of some?

Dr. Warder: I don't think them the same, but very nearly the same. The Fall Queen is very regular. The Buckingham becomes ribbed, a little on the crown at least; if confined to one, I prefer the Fall Queen. We call it in Kentucky, Winter Queen; fine for market and for drying.

Geo. Husmann: Fall Queen keeps till March, and is in good eating condition till November.

RAMBO.

Geo. Husmann: I cannot say anything in its favor; good bearer every other year; poor color; does not keep, nor retain its flavor; not profitable for market.

F. A. Quinette: That is my experience; it is much troubled with worms and rots quick.

N. J. Colman: I consider it one of the best family apples we have; good for market, if properly handled; good for cooking. A splendid dessert apple; will keep till the first of January. No apple can take its place till the first of January. Some say they can make more on this than any other variety.

Dr. Edwards: Don't know so much about it for market, except I always try to buy it myself; know no apple that keeps the apple flavor better.

T. R. Allen: I grow it, think it one of the best; sold it in the city when I kept store, and never could get enough of it; was astonished to hear Mr. Quinette say it was not a good market apple.

C. S. Rannels: My feeling in regard to the Rambo is somewhat like the man's who went to the nursery for a hundred trees; he got 98 Rambo; and when the nurseryman was in a dilemma what to fill it out with, the old man thought he had better put in two more Rambos. I have them in eating condition on the fifth of April. Have three orchards, one on the North and one on the South slope; the fruit grown upon the North slope keeps much longer than those grown upon the South slope. You can sell all the Rambos in St. Louis you can raise.

Dr. Stevens: I grow the Rambo, they bear very heavily and hang well upon the trees; market well in the fall and will do well till December.

L. D. Votaw: Thinks it an apple for profit.

F. A. Quinette: They bring the lowest price of any with me, \$1.25 per barrel.

Dr. Stevens: I sell them at \$1 per bushel.

Geo. Husmann: It is strange there are such conflicting statements: Some of the gentleman may have the Pennsylvania Red Streak.

Dr. Edwards: Think there is no one can make that mistake. I paid last fall 75 cents a bushel for Rambo, and wish I had known Mr. Quinette sold them at \$1.25 per barrel.

Jonathan Huggins: Have lived in Illinois for 20 years, and find the Rambo indispensable for home consumption, and they bring as high a price as the Jeneton. I have evidence of the estimate of their value as a home apple, in the little footpath made through the orchard to the Rambo trees—children always find out good fruit.

HUBBARDSTON NONESUCH.

Dr. Warder: A sound, strong, vigorous tree. It has a tendency to overbear, it then becomes a green apple, and then it does not compete well with some others, but it is a really good apple; with some it drops from the tree; the worms will get into that hole in the end of it, and then it will drop.

WINE, HAY'S WINTER OR PENNSYLVANIA RED STREAK.

This is one of the best fruits we have.

W. C. Flagg: In the name we must follow Downing, but these names refer to the same fruit.

Dr. Warder and N. J. Colman: They are all the same fruit.

T. R. Allen: I have the fruit, and am much in favor of it, is a fine market fruit, comes just after the Rambo; upright grower, but open, very thrifty, size of fruit larger than this (points to one on the table large Rambo size).

J. Snedeker's experience the same.

Dr. Edwards: Knew this apple 50 years ago, it was then good.

W. C. Flagg: It proved tender in '55-6—suffered about as much as the Jeneton; very productive and very good.

Wm. Hadley: Have a few trees 25 years old, bear too much and break the trees down; the old trees bear somewhat smaller fruit.

NEWTOWN SPITZENBERG.

Geo. Husmann: Good tree, hardy, regular, easy to pick; good quality, even and showy; keeps till January. I don't know that it has a fault.

Dr. Warder: This is one of my favorites for the table. There is some fault in not holding itself upon the tree and in getting wormy. It will come to the ground before picking; it is well recommended as the Vandevere.

Geo. Husmann: As far as my experience of it about Hermann for the last ten years, it does not fall from the tree.

Jas. A. Bayles: There are trees of it on the Sigerson farm that certainly recommend it.

Dr. Warder: Has any one seen the scab on the fruits.

Geo. Husmann: I have never seen it upon this fruit.

Dr. Warder: It is one of the first on which I observed this disease. It was upon all apples this year, but some were better and some worse, among the worst was the Newtown Spitzenberg. Don't know if it is the result of the want of care or not. Among some of the most highly cultivated, it was as bad as anywhere. Sun and the snow so bad it could not be picked. The Fall Wine did not give a good specimen.

YELLOW BELLEFLOWER.

N. J. Colman: I can't recommend it for profit, it is a poor bearer, drops very badly from the tree; it is a good apple, and commands a higher price in market than any other of its season. The trees are a mass of white blossoms in spring, but don't bear a bushel to the tree on my trees, which are very large. My soil is very rich.

Dr. Warder: On our rich bottoms we never plant it; on our poor hills it bears abundantly; overbears; a medium specimen is always the best.

J. Snedeker: Does well with me, high and low.

Jonathan Huggins: I never recommend it to my private customers.

Dr. Warder: In rich prairies it is slow in making a crop—8 to 12 years—but on uplands it makes a large crop. In light soil I have seen it bear in 4 years from planting.

FULTON.

N. J. Colman: Know it in Illinois, vigorous tree, early bearer, good market fruit.

Jonathan Huggins: Has any seen it fruit south of Fulton Co., Ill.

N. J. Colman: I have seen it in this latitude, and its reputation is good.

W. C. Flagg: The Alton men recommend it.

DOMINIE.

Jonathan Huggins: Several of my customers have fruited it, and presented me with specimens of the fruit; it is large, much like the Rambo.

Dr. Warder: About Cincinnati it is much admired for its good qualities—in a geological formation much like this. It was received as the Well's apple. There is one remarkable thing about it—its fruit grows all along the branches, and it holds on to the stem very hard; ripens in December and January; very saleable at Christmas.

FALLAWALDEN OR TULPAHOCKEN.

President: It is a large showy apple, fine fruit.

N. J. Colman: It does first-rate here; those who raise it think much of it as a market apple.

J. Snedeker: Have fruited it 5 years: like it well; think it late fall or about November.

Dr. Warder: We don't call it a keeping apple; dispose of it about Christmas: it is essentially a market apple. It bears early and all the time, loses its goodness as it gets old, and at about 12 years begins to die.

ROME BEAUTY.

N. J. Colman: I have seen it grown in this region. It is one of the most desirable fruits for this market; showy, not first-rate quality; comes early into bearing; not much in market; seen it in Ill. I know of no more valuable market variety.

Dr. Edwards: In Cincinnati it is the great apple. It is claimed to originate in Quaker Bottom. It is a true Railroad Apple. It has made more money down the Ohio River than any other apple except the Roxbury Russett.

W. C. Flagg: It has been fruited in Illinois by Mr. Rutherford; an excellent apple and good bearer.

FRYOR'S RED.

N. J. Colman: A poor grower in the nursery, but a first rate fruit. One of the very best. Is a long time in coming into bearing, but when it does bear, no other fruit is better.

T. R. Allen: It is well known and much esteemed with us.

W. C. Flagg: I have trees 40 years old, healthy and vigorous; this is the result in part perhaps of not being early bearers. Fine fruit; will sell well when other varieties will not; quality very superior. It stood the hard winter of 55-6.

President: I have had it from the bottom; not so high flavor; of fine color.

T. R. Allen: Have had trees planted 7 to 8 years, and have not got a peck of fruit, and specimens rather small.

J. Snedeker: Have had it for 15 years, not a good bearer till 10 to 15 years old.

W. C. Flagg: There is less waste in gathering this variety than most others.

Dr. Warder: There is no apple that will illustrate the effects of change of climate and soil better than Pryor's Red. I am sorry I have not a specimen exhibited at Indianapolis, where it was scrubby and uneven, with little russetts. In—Co., Ind. you can feel the russet spots—it is a deep bright red. Two years ago in Dayton, Ohio (from Rochester N. Y.) It was smooth, clean, striped like the Duchess of Oldenburg, of its quality I need not speak.

President: I think that the influence of this society will elevate the public taste, and will lead them to appreciate fine apples in particular.

JONATHAN.

Dr. Warder: This was Judge Buel's favorite apple. It is not so well known as it should be. I think no one will vote it for market. It is a good bearer, medium or fair size, beautiful deep bright red color. The common class of purchasers would hardly distinguish it from Wine Sap. With a very fine aroma. It is a mean tree in the nursery, you must wait perhaps 4 years for a tree to suit the public taste.

N. J. Colman: I am planting it out extensively here; we have no better for market; keeps well, firm flesh.

President; I have seen it darker than Wine Sap in this market.

ORTLEY.

Dr. Warder: Does it scab here?

J. R. Woods: On my place they scab. This year they had the scab and dried upon the tree. I have raised them extensively. Judge Trumbull took them to Washington, where they were much praised. I have sold them to send as presents to many of the Eastern States. It is regarded as one of the best apples in our neighborhood.

A. S. Redfield: In some places it is liable to sun scald.

Dr. Warder: The fruit is on the trees like black walnuts; there are no young trees put out, and the old trees have done nothing for four years in—County, Ohio. It appeared like the mildew upon the small berries, and they are almost everywhere inferior this last year.

WHITE WINTER PEARMAN.

President: I have seen it much scabbed here.

WHITE PIPPIN.

N. J. Colman: Exhibits a specimen. It is quite extensively cultivated in some parts of the State. On account of succeeding well everywhere, is taking the place of the Newtown Pippin, which does not succeed on our prairies, or on any but limestone soil. A variety that finds a ready sale in market. Not of first rate quality, but makes a showy appearance and sells readily.

Dr. Warder: This is not high flavored, of medium size, fine for cooking, but don't set it down for dessert.

MICHAEL HENRY PIPPIN.

N. J. Colman: Shows a specimen. I have seen it grown extensively in this State, it is much liked as a market fruit, does not possess high flavor, is an abundant and regular bearer; there is quite a demand for the trees and it ranks high.

President: One of the most profitable grown in this State.

Dr. Warder: There is no character about it; it is good for market; it requires orange peel along with it when cooked. What little aroma it has goes up the chimney, but it will sell.

President: You can plant about twice as many trees upon the same ground as most other varieties.

YELLOW NEWTON PIPPIN.

J. Snedeker: I have known it 30 to 40 years, have trees 20 years old, I don't think it profitable; in barreling there is much waste; would not recommend it to be planted in large quantities. I am 12 miles from the river, upon rich

prairie soil, and I see it do as well as upon poor light soil and lives as long; the largest specimens are grown upon the prairie.

Dr. Edwards: In Kentucky, when a boy, on the limestone ridges they grew very large.

N. J. Colman: The finest we have are grown upon the bluffs and hills where the limestone crops out. It can be recommended on the limestone soils, and upon them only.

W. C. Flagg: My soil is not limestone, but rather prairie, upon a tenacious clay sub-soil, and with me it does well; the trees have been planted some 40, some 20 years.

Jonathan Huggins: It does well upon the Alton Bluffs. At Woodburn, I have trees 14 to 15 years old, and they have not given me a bushel of fruit yet. I have thought it was because I cultivated them too much. I am upon the prairie.

Wm. Hadley: I have about 100 trees set out about 12 to 15 years; they have been but little profit; got some fine large apples; trees have grown well; not so rapid as some, and there has been an insect that has preyed upon the leaves, like a measuring worm, it confines itself almost entirely to the Newton Pippin. In Clinton and Payne Co's., Ills., they do well.

President: It needs lime and good cultivation.

J. R. Woods: It sets too much fruit.

Dr. Warder: I want to ask if it is the Green or Yellow Newton Pippin?

Jonathan Huggins: Would like to know the difference between them?

Dr. Warder: Exhibits a sample of each. The texture of the flesh is finer and the flavor higher in the green than the yellow; the trees are much alike, can't tell them apart in the orchard; they make fine heads; the trees from which this fruit was obtained are perhaps 40 years old; the trees were confused in the nursery for a long time. The Green Newton Pippin is solid, smooth and high flavored.

A. S. Redfield: Is this not the Green Pippin of the old orchards?

Dr. Warder: It is sometimes called the Green Pippin.

NEW YORK PIPPIN.

Dr. Warder: It is said to be the synonym of Ben Davis and Victoria.

President: I don't think it well known here.

A. S. Redfield: I don't find it anywhere except at Sandoval, Ill. They sell well, are soft, and rot as soon as bruised; they are said to keep well. It will do well for women and children. It has little flavor. This is a fine perfect specimen.

N. J. Colman: It is considerably cultivated in Illinois, and sells well from its showy appearance. I should consider it an excellent market variety. It is known by the name of the Baltimore Red in Southern Illinois.

Dr. Warder: It is called for in the nursery by the thousand in a bill. It has been sold for some months at Centralia.

A. S. Redfield: It has been called the Baltimore Red, it was said to bring \$1.50 to \$2 per bushel.

SMITH'S CIDER.

Dr. Warder: It has remarkably white flesh; is a very red apple.

N. J. Colman: It should be recommended for every collection. I am planting it largely in my market orchards. It comes early into bearing.

Geo. M. Beeler: I am well acquainted with it in Indiana; it is good; sells well; has a tendency to overbear; must be kept in a dry place.

J. Snedeker: Have been acquainted with it all my life; consider it one of the most profitable apples we have for market; great bearer; high flavor.—Fifteen years since I set out 50 trees, 10 were Smith's Cider, and they have yielded me more profit than all the others in that time; some of the others are Early Harvest, Red June, Jeneton. It hangs well upon the tree and sells well far in the winter.

RAWLES' JANET.

Jeneton here—Too well known for discussion.

WILLOW TWIG.

Samples presented by Mr. J. R. Woods of Alton.

W. C. Flagg: I received a letter from Mr. Woods, upon this apple—as he did not expect to be here—it will show its value. (Read extract.) “Finding among the apples in my orchard one of remarkably fine appearance, but hard, sub-acid, rather coarse in flesh and quite un-eatable, I concluded that (although I knew to my sorrow that there was a large amount of truth in the old adage about appearances) this apple was altogether too respectable in all its proportions to be worthless. Selecting about 100 of the best, I carried them to my cellar, spread a large newspaper upon a board shelf and placed the apples carefully thereon. In the following April and May, I found them in good eating condition. About the last of June, one of the most eminent Horticulturists, at that time of St. Louis, called at my house on his way to Cincinnati, Ohio, and after eating some of my Willow Twigs, insisted on taking a few with him to show the famous fruit growers of that vicinity. Even these gentlemen did not know the name of the apple, and I remained in doubt about it until the fall of 1854, when, at the State Fair held at Alton, I took a premium for the best 25 varieties. The Willow Twig will keep well till the 4th of July. We often have two or three till the middle of August.”

J. R. Woods: The tree resembles the Weeping Willow; bark smooth, clean, and healthy. Tree symmetrical in every respect. Fruit seldom smaller than samples. Very large, does not come into bearing for eight years or so. It is one of the favorites in Ohio.

President: Downing says it is an early bearer.

Dr. Warder: Downing thinks that if he gets grafts to bear in 8 years, that is early. We are so very fast that we must have fruit in 4 years.

N. J. Colman: One of the very best late keepers we have, should be in every collection.

NICKAJACK.

Specimen.

Dr. Warder: A very healthy, vigorous, large tree, enormous bearer, fine fruit, keeps till the customers are ready for it; few want it in the fall, it is then coarse and mean; will keep as well as the Willow Twig; it is a good cooking apple all the time, but not a good dessert apple.

E. B. Coleman: Down in Mississippi it is one of the best apples.

Dr. Warder: In Louisville it is—, Carolina in Kentucky.

GILPIN.

Not Discussed.

LARGE YELLOW BOUGH.

J. R. Woods: It is remarkable for its honey taste; it crushes completely when it falls.

Dr. Warder: It is picked green, and has no taste unless of molasses and water. When ripe it is too dark and soft.

Wm. Hadley: I have a few trees, it is peculiar in this that wherever a limb comes out there is a knot. I think it is a good apple; one of them will perfume this room: it ripens with the Red June.

BROADWELL.

Geo. M. Beeler: It is the great sweet apple of Ohio, and is much used in Indiana; in season about January.

CANNON PEARMAIN.

Dr. Warder: There is any quantity in Ohio and Indiana. It is a good cooking and eating apple; very sound and keeps well.

LADIES' SWEETING.

Dr. Warder: It grows well, bears well, is a long keeper.

President: There is a fine sweet apple raised in this State, the best sweet apple I ever tasted; it is red, slightly conical, very good, bears profusely, was brought from Kentucky.

Dr. Warder: I have seen it, it is the Red Sweet Pearmain, the Lady Finger of some parts of Ohio, Indiana and Kentucky.

N. J. Colman: I think I know it by the name of the Red Winter Sweet, which succeeds well here.

Dr. Edwards: There is an apple grown between here and Alton much like this. I think it the best sweet apple I ever tasted, very handsome.

N. J. Colman: Will Dr. Warder give the society a list of sweet apples in the succession of their ripening.

MISSOURI PIPPIN.

President.

N. J. Colman: I have it in cultivation, let Dr. Warder have specimens; good grower in the orchard; comes early into bearing; a very showy apple; color red. An excellent market variety; succeeds well wherever planted.

A. S. Redfield: I have seen 100 orchards of it. It grows well, is good looking, hangs long on a tree and comes out of the ground in spring in good condition. Mr. Mock says it never fails of bearing a good crop of fine, handsome fruit; rather early bearer; good for cooking; a second-rate fruit as to quality.

It was, on motion,

RESOLVED, That we change the order of the programme so as to allow some important fruits to be discussed at an early period of the session.

PEACHES.

W. C. Flagg: Read a list of peaches with the time of ripening, as drawn up by Mr. Pelton; but the correctness of the dates being questioned, the varieties were brought up as nearly as known in their order of succession.

TROTH'S EARLY.

Mr. Hadley: It is the first peach of the season, and there is no peach that competes with it in market. Early Purple and Early Tillotson come a little later. I obtained buds of Pettingill's Early Red, which I saw with Mr. Pettingill, and think it promises very well.

HALE'S EARLY.

N. J. Colman: I budded several hundred trees with this variety the past summer. It originated in Ohio. It is a freestone peach, flesh white, about the size of Serrate Early York, and resembling very much George IV in appearance. It is distinguished for being the earliest good peach that ripens, being several days earlier than Early Tillotson and Troth's Early.

Rev. J. Knox: It is cultivated in the neighborhood of Cleveland; don't know it farther south; said to be earlier than Troth.

Dr. Claggett: If it ripens earlier North, it gives good promise in our latitude.

Dr. Warder: Have not seen it, but have good accounts; it is one of the earliest.

F. A. Quinette: I have watched the market for 20 years, it is the best place to judge of fruit. Troth's is so far the earliest in perfect condition, it is the best we have here; Cooledge's Favorite is a week later. Thinks Bergen's Yellow is earlier than Troth.

Jas. A. Bayles: Bergen's Yellow is but the Melacatune.

PETTINGILL'S EARLY RED.

John A. Pettingill: It is a seedling from a New Hampshire tree, taken from New York to New Hampshire, and from these trees are the trees I have. Two years ago it bore full, had some persons call for some buds of Troth's Early who saw the fruit. It is two weeks earlier than Troth, not quite so large as an average, but had some quite as large; the tree bore heavily, had to pick the fruit to prevent them breaking down the trees.

Mr. Hadley: Got some of the last of the peaches, they were then long past their season. Many have called to see the peach and tree. The Jacksonville men think highly of it. It was affected by the curl of the leaf, which hurt the trees. I would advise to plant sparingly of it till it is farther tried. I planted the seed in 1852.

EARLY TILLOTSON.

N. J. Colman: I have raised it and found it the best early peach I had; it is a fine tree, rather weak grower; productive; even-sized fruit. Mine were grown upon rich prairie soil; would plant it largely; trees four to five years old.

F. A. Quinette: My objection to it is, it is tender and smooth in the skin. Secretary: Agrees with Mr. Colman; has fruited it and seen it fruited on our uplands.

EARLY CLING.

J. Snedeker: Have had it for fifteen years, it bears well, profitable, about the size of Large Early York, and ripens at the same time.

F. A. Quinette: Have a few trees; nothing extra to recommend it.

Dr. Morse: We don't want an early Cling, they don't sell well in market; they are not good to eat; would like to know about the difference in market value between Clings and Frees.

F. A. Quinette: The Clings keep better than the Frees, are not so liable to rot upon the trees, nor to be hurt by the curculio. I have made more from the Washington Cling than any other peach in market, it is the most profitable peach.

LARGE EARLY YORK.

Wm. Hadley: It ripens with me before Troth's Early; there is no room in the time for another unless it is better.

Jon. Huggins: The Tillotson comes before the Large Early York.

COLE'S EARLY RED.

Jon. Huggins: This peach comes before the Large Early York; the order with me is Tillotson, Cole's Early and Early York.

F. A. Quinette: It is too small for me.

Geo. M. Beeler: It is the best early peach in Indiana.

Geo. Booth: Am not sure of its identity; have a large peach that ripens with the Large Early York or a little earlier, about its size, think I got it as Cole's Early Red; it has a red cheek and is red at the stone.

J. Snedeker: Have the same peach as Mr. Booth; got it from Mr. Elliot as the Cole's Early Red.

G. Booth: Some say Cole's Early Red is a small peach.

G. M. Beeler: Though not a large, still not a small peach; very red; ripens all at once, is very good for that.

J. Snedeker: Thinks it a small, early profitable peach.

J. V. Hopper: I have this peach, it is good, got from Mr. Elliott.

Jon. Huggins: I got it from Parsons, of New York, think it the most successful grower I have.

Wm. Heaver: It is some years since I fruited it, it is the same described by Mr. Hopper, not the same as that of Mr. Booth; deep red peach, rather dry, second quality, not desirable but for early ripening, will never sell in competition with Large Early York, but comes before it, its earliness is its value; planted this and Troth's Early; it is a little earlier than Troth.

F. A. Quinette: Mr. H. don't describe the peach I have.

CRAWFORD'S EARLY.

Wm. Hadley: I have a variety—comes before Crawford's Early, think it a little better, finer in the grain, not so acid; bought it in Delaware for Honest John; fine peach, large size, good quality, a yellow peach. I think in an unfavorable season subject to rot. When got into market in good condition it sells well, tree healthy.

YELLOW RARERIPE.

Dr. Morse.

Wm. Hadley: Fine peach, tender for shipping, don't know that we can get a peach to fill its place; good size, fine bearer, healthy.

BERGEN'S YELLOW.

OLD MIXON FREE.

NEWINGTON CLING.

F. A. Quinette: Good, one of the highest-flavored we have, cultivated it for

fifteen years, had it for the last four or five years from various orchards, it ranks for profit next to Washington Cling, it has no superior.

A. V. Hopper : Agree with Mr. Q., the young shoots a little liable to mildew.

MAGNUM BONUM.

Wm. Hadley : Comes in as the next peach, most excellent, red, fair size, fine flavor, bears carriage well, don't know how to dispense with it.

W. Heaver : Have known it ; was held as the best peach during the season ; for quality unsurpassed.

HARKER'S SEEDLING.

W. C. Flagg : It comes in Mr. Pelton's list after Magnum Bonum.

Wm. Hadley : Good peach, no better in its season, equal to Magnum Bonum ; showy, gets to market well, good for table use, can't dispense with it in our locality, got it from the East.

CRAWFORD'S LATE.

Mr. Quinette.

STUMP THE WORLD.

Geo. Booth : It comes in with the Crawford's Late. If I had to plant an orchard, would plant the half of it of Stump the World, it stands the first of any large peach, have had them measure 12 inches in circumference. It took the premium twice in Chicago.

President : The market was very scant this season of peaches of large size and good quality.

RED CHEEK MELACATUNE.

F. A. Quinette : It is not extra in any respect, don't carry well to market, ripens before Washington Cling, comes before Crawford's Late.

Dr. Warder : A fine flavored peach, good for market, good bearer.

WASHINGTON CLING.

COLUMBIA.

F. A. Quinette : Free, yellow, fine size, seldom affected by curculio ; the worms are a great objection here ; comes in succession after the Washington.

Dr. Warder : I think it one of the very best, it don't look so well as some ; give a man one to taste and he must have another.

PRESIDENT.

Dr. Morse.

Dr. Warder : It is one of the best market peaches we have.

HEATH FREE—DELAWARE WHITE—MORRIS WHITE.

Mr. — : Morris White is the best canning peach we have ; good for family ; rich ; soft—too soft for market.

MISSOURI MAMMOTH, OR VIRGINIA.

N. J. Colman : It comes after the Columbia ; an excellent market variety—indispensable in its season.

Dr. Morse : Can say little about it ; saw it at the Fair, it was mistaken for the Columbia.

Dr. Beale : Mr. North is not satisfied with the name Mr. Colman gave it, and questions his right to give it a name ; he brought the seed from Virginia and planted it, and calls it Virginia.

Secretary : Has heard this complaint before ; it is irregular in its bearing, tending to overbear the one year and be very small the next.

N. J. Colman : I have no recollection of having ever heard a name for it. I knew the variety was produced by seed planted by Mr. North. On account of its Mammoth size, being much the largest peach I ever saw, and knowing no name for it, I called it the Missouri Mammoth in my catalogue. It ripens after the Columbia, is larger by far, when the tree is properly pruned, and not allowed to over-bear, and is one of the best shipping peaches with which

I am acquainted—that is, it will bear more rough handling. Of course if a tree is permitted to overbear one year, it cannot do well the succeeding year.

F. A. Quinette: I thought it the Columbia.

GLASGOW PEACH.

N. J. Colman: I saw a peach in Mr. Quinette's store that I never saw before, immediately succeeding the Missouri Mammoth, coming at a season when no other good freestone was in market. Upon inquiry I found Mr. Q. knew no name for it, that he had marketed it several years, and considered it the best of its season—or that it was alone in its season. He told me the tree was in the centre of the garden of Wm. Glasgow, Jr., Esq., and I went there and procured the buds and budded several hundred trees of it. I could not tell whether it was a seedling or not; but can find no variety in the books answering to its description, and believe it to be a seedling. Knowing no name for it, and being obliged to designate it by some name, I called it the Glasgow. I consider it a very valuable market variety.

F. A. Quinette: Thinks it one of the best of its season; fine tree, known it for four or five years. It is red, free, and of fine quality.

HEATH FREE, KENRICK'S HEATH FREE.

Wm. Hadley: A good white peach, rather tender in the skin, like all the white peaches, rather hard to take to market; sells well; good for canning; fair size; good bearer. In Southern Illinois, when this variety was in hand, our neighbors had none.

J. Snedeker: It is one of our best peaches, and the best in its time.

DELAWARE WHITE.

Wm. Hadley: Comes next, and fills up a vacant place; a little firmer than the Heath Free; a slight red cast at the stone; fine size and flavor, sweet.

; HEATH CLING.

SMOCK.

F. A. Quinette: It is the last good peach we have. Lagrange comes before the Smock.

CARPENTER'S WHITE.

For information.

LAGRANGE.

E. B. Coleman: Comes about the 15th of October, about with the Heath Cling.

President: A white peach, white at the stone.

Geo. Booth: Don't think it worth cultivation; got 150 trees five years ago, have taken up 100, and will take up the rest; the tree blooms well, but they drop off till none are left to ripen.

J. Snedeker: Has them, they have done much better than Mr. Booth's; not first-rate.

E. B. Coleman: Perhaps I have not the same peach; it is oblong, white at stone, excellent, bears in the nursery.

THE GRAPE.

The grape was then taken up, and an essay read by Mr. Husmann, of Hermann.

[The Essay will be found in the Appendix. The reason it does not appear here is, that by a misunderstanding, it was taken to Chicago. We have waited several days for it and concluded to insert it in the Appendix. The reader is requested to read the Essay before reading the discussion, as it is introductory to it.—PUBLISHER.]

Geo. Husmann: I may as well add that now the Herbemont is generally left uncovered in winter; it is so much hardier and ripens its wood so much better in our light soils, that there is little danger in exposing it in our ordinary

winters after it is a year or two old; and instead of letting it make a great number of small canes, we keep it confined to two or three long canes, which become solid and well-ripened, and are then pruned back to the length desired.

Dr. Edwards: My Herbemont was not covered or protected, and was not summer pruned, and stood well.

Emil Malinckrodt: Not having prepared an Essay in writing, I will simply give my experience with the grape in this country. I came from the Rhine to this country 32 years ago, and was much struck with the difference between the native and foreign grapes. I obtained for trial about 80 varieties, 22 years ago in the northern part of the city, they generally did well for a year or two and gradually died off. I have also tried the seed, but only obtained one that was of much account from the seed of the Green Malaga; it did for a few years and dropped off like the others. Only two varieties have stood since that time, the true Burgundy and the Rulander, these two varieties will succeed in this country, all the others failed from mildew. Some were affected with a disease like Honey Dew and all seem to suffer severely from the extreme and sudden changes of temperature. (Read an extract from a communication to the "Valley Farmer.")

In reference to the native grapes we commenced with Isabella and Catawba. The Catawba is a good grape, but liable to insects and disease—the mildew, honey dew and rot. Dr. Englemann of this city says that rot is caused by a minute fungi, the sporules of which get into the ground in fall and early winter, are taken up with the sap into the leaves and fruit, mature in the fruit, which drops upon the ground, sowing the sporules again to repeat the process when the atmospheric conditions are again favorable to their development. If the season is dry, it is not favorable to the development of the fungal sporules. The Norton's Virginia in fifteen years has had no rot. I may remark that there is another fungi that affects the leaf, caused by the bite of an insect like the Midge. You will see them on the leaves in the fall. Dr. Englemann thinks they belong to the family of locusts. Some varieties are much less subject to this disease in the leaf—the Clinton, Concord, Norton are but little affected—the Catawba, Isabella and Delaware suffer much. There is much of this disease dependent upon the soil. The French authorities say that no good wine grows except on mountains, and class the soils or geological formations in their order of value as Volcanic Calcareous: Sand, mixed with pebbles and vegetable mould. I would give no manure whatever: and few other varieties of soil are fit for the grape without much previous preparation and admixture. Catawba is a good grape for the table when you get it. Concord is a good market grape, not a table grape—Delaware and Bullitt next. Delaware will make a good wine and can be easily managed, will train low. The Taylor or Bullitt has some aroma and sugar. Norton's Virginia bears good crops and makes good wine.

But the wines are made in too small quantities, and the cellars are not deep enough. I have thirty-five varieties experimenting upon for wine and table.

Rev. J. Knox (on call): I have not a great deal of experience in grape culture, but have had more success than I dared to hope. It seems an established fact that foreign varieties are not adapted to our soil and climate—nor are the foreign modes of culture adapted to our native varieties: they want more room, and are impatient of so much control as is given in Europe. In preparing the soil for grapes I don't aim to stir the soil three to four feet deep, but about twenty inches, and draining is certainly to be recommended. I plant in rows eight feet apart and the plants six feet apart in the rows; cut the vine down so as to start two arms. Tried the spur system, but it does not cover the trellis so well as the arms. As to varieties, there are three that I am satisfied are good in my locality. There is so much difference in soil and climate, and these conditions exert so much influence upon varieties, that they have to be tried with caution by every one planting.

The Hartford Prolific was very fine—till last season I thought it the best early grape. The vine and fruit very free from disease. I am reported to have said, "that the fruit drops from the vine with me." It does not drop with me, it hangs till the fruit becomes like raisins.

The Creveling has fruited with me the first time, and is a very superior,

fruit, superior to the Hartford Prolific and three to five days earlier; a good market fruit.

Delaware I have fruited for three years, and think much of it, and may prove a valuable wine grape—am much inclined to think it will, matures early, an abundant bearer. There is no grape that, take it all in all, pleases me better than the Concord; I have fruited it five years; it is free from disease; ripens even, and this is of much importance in a market fruit. In the Catawba and Isabella you have to pick over the bunches. It is an abundant bearer; the third year from planting will bear ten pounds of fruit, and the fourth year twenty-five pounds. It is admitted on all hands that there is no more beautiful grape in fruit or vine than the Concord. It is a large bunch, large fruit, with a fine bloom, and is a good table grape as well as good for market. There is something so spicy when fully ripe, that it is liked better by many than the Delaware; in short, nine-tenths of the purchasers prefer the Concord to the Delaware, and would pay twice the price for it. It is better with us than in many localities; better than in Boston. I obtained it from Mr. Bull, and it gives increasing satisfaction from year to year. More Concorde were planted last year than of any other grape. I have read in the proceedings of the New York Farmers' Club, that the Delaware is extolled and the Concord condemned. It is possible the Concord does not do well with them, it may not ripen well in New York State, but I sell my Concorde well in New York, Boston, Washington, Baltimore, Chicago, and in one instance in St. Louis. I think those who condemn the Concord do grape culture a great injury.

In answer to questions: My Concorde ripen about the 10th of September, and I market them till the middle of November: let them hang on the vine all the time; don't try to keep them long. When I get twenty-five cents a pound for them the shorter time I keep them the better. The average to the vine after the third year may be given at twenty-five pounds, but much greater quantities are often raised per vine. Grow grapes upon different exposures, both north and south. Am from 300 to 400 feet above the river.

E. Malinckrodt: In keeping the Concord it falls from the stem; will only keep about two weeks after gathering, when all the berries drop off. The Herbemont is perhaps the best table grape.

Wm. Heaver: I have listened with interest to Mr. Knox, but differ from him in thinking nine out of ten will prefer the Concord to the Delaware.

I think the Concord the grape for the mass, but in point of quality, the Delaware stands in the first rank of hardy grapes. For wine the Delaware is equal to any, not excepting the Catawba.

Something has been said about the Herbemont; it is not so much cultivated as it ought: it is very productive. If it is caused to make soft, green, un-ripened wood, it will be winter-killed; but in ordinary winters, it will do without any covering. In '52, '55 and '56, the Catawba was also winter-killed; in these winters the Delaware was uninjured. I think the three best grapes are the Delaware, Concord and Herbemont. In Cincinnati, we don't place the Catawba among the three best, there are so many drop from the rot unless in very favorable localities; and to bring out all its good qualities, much attention is required.

The Norton's Virginia. We look to the neighborhood of St. Louis for a knowledge of its qualities. In Cincinnati it is found to possess the same qualities that renders it of so much value here, and we are much pleased with it.

The Taylor's Bullitt—I was chairman of the committee that condemned it for cultivation. Its small size, large seeds filling up the skin, its small aroma with so much trash, is not worth searching after. I have always condemned its cultivation.

E. Malinckrodt: The Taylor is large and rich with me; the seeds are only two, while some of the others have three or more—and I would like to be satisfied that the Delaware is a native at all.

Wm. Heaver: Much has been said upon the origin of the Delaware; its history is traced from New Jersey to Ohio; and Dr. Mosher has shown that seedlings raised from the seed of the Delaware had the strong peculiar native aroma, which is to me very conclusive of its nativity.

Rev. J. Knox: I received a letter from a gentleman who received a sample of wine from Mr. Snieke, made from the Cuyahoga grape, which he admires very greatly.

Wm. Heaver: The Cuyahoga was cultivated under the name of Coleman's White. Sometime since it was exhibited at Cleveland, and there was called Cuyahoga. It is said to be a seedling raised by Mr. Coleman—a white, hardy grape; which is a desideratum. It seems to have more good qualities than any other white grape we have tried. The Anna and Rebecca don't stand our climate well. The leaves are easily destroyed and cease to shade the fruit, which will not ripen. It is a good grower; handsome bunches, and fine berries.

Geo. Husmann: I am compelled to add my testimony to that of Mr. Malinckrodt in favor of the Taylor's Bullitt. I can't find it so inferior as Mr. Heaver states. I think it much larger than the Delaware; exceedingly productive, and of very good quality, and would place it next to the Delaware in value. It has three times the growth of the Delaware, and much more aroma, and does not drop its leaves; have fruited it two years.

Dr. Edwards: Fruited the Taylor beside the Delaware. The Taylor gave the largest crop, and in the growth of wood there is no comparison. I am favorably impressed with it from the experience of one year.

N. J. Colman: I wish to add my testimony in favor of the Taylor Grape. I have been cultivating and watching it for from four to five years; have seen and eaten it, and think it promises remarkably well. Perhaps my friend Heaver has not tasted the Bullitt, or that it has been slovenly grown. I know that it was condemned upon a short notice, and it may be our friends in Cincinnati had not fair specimens. It is immensely productive; larger than than the Delaware; one of the strongest growers and hardy as an oak. If the seeds are large, there are but two of them when other varieties have three to four. I hope Mr. Heaver will not condemn the Bullitt from the tasting of a grape, not two-thirds the size of the Delaware.

Wm. Heaver: With respect to the report referred to, it came out two seasons. With regard to the growth of the vine, the fruit came from G. R. Leeret, of Glendale, and he considered it inferior; he intended to cut it down and graft it with some other variety. I like to test a fruit on its own merits. We have all our little favorites.

Rev. J. Knox: This is I think the same grape that both refer to, and is another evidence of the difference in fruits in different localities.

Geo. Husmann: This is certainly the case. The Taylor is not a white grape, but a pale lilac; and the Catawba in some localities becomes nearly a black, instead of a flesh color.

Rev. J. Knox: I would not have this discussion close with the idea left upon any mind that I disparage the Delaware. I think it is the best wine grape, but I think the Concord is the safest grape to plant of the two and think it almost impossible to overstock the market. Hartford brought thirty-three cents; Concord twenty-five to twelve and a half cents and up again to twenty-five cents. It is after all the people that fix the value of grapes.

N. J. Colman: There are two foreign grapes that have been referred to here—the Burgundy and Rulander—these have been grown in St Louis for twelve to fifteen years, and have proved hardy, healthy and prolific grapes, and they are much esteemed for wine.

Rev. J. Knox: I desire to name the Elsingburg.

Geo. Husmann: I name the Cassady, a white grape of a peculiar honied flavor; its thick skin, its greatest fault; will make a valuable white wine.—Mary Ann or North Carolina Seedling, fine strong grower, good bearer, ripens five to six days before Concord; large bunch; berry large, black, of good quality vine; promises extremely well, I think it will make a good wine; there is another, Clinton, a variety destined to be a good wine grape. Another grape promises to become a wine grape unsurpassed by any we have tried—the Cunningham; it is something like the Herbemont; makes a wine of immense body, with a flavor which many like.

Rev. J. Knox: There is a grape that has not been named—the Diana. I keep it till the first of January, and sell it at fifty cents per pound; it is supposed to be a good wine grape.

The Report of Committee on List of Grapes having been received, it elicited the following discussion:

CLINTON.

This will do where hardly any other will do.

CATAWBA.

Dr. Morse: Those who plant Catawba will be apt to be disappointed with it. Secretary: It has done very ill with every one in our neighborhood, especially after the first two or three years.

Rev. J. Knox: We must be cautious in recommending the Catawba for general cultivation, there is no question as to its being extremely liable to rot, this is the case even at Cincinnati, where it is so much cultivated.

Dr. Edwards: I have about 1,200 Catawbas in bearing, and they had not a single rotted berry. There is much in location, and for the last few years there has been too much pruning in summer.

Wm. Heaver: I must speak in regard to the Catawba. We are not to give it up because it has for the last few years been liable to rot. I heard Mr. Bateham say a few years since it was useless to cultivate apples around Cincinnati, but he lived to change his mind; and as to the Catawba, there are hundreds of bushels of these raised for one of any other kind in America.

Dr. Claggett: Has no doubt grapes have been injured by too much summer pruning. When we understand the proper method to prune and manage them, it will be better with the varieties.

W. C. Flagg: I have visited some of the vineyards of Southern Illinois. Mr. Koepfli, of Highland, has kept an account of the average for several years, and finds it exceeds the average in Germany; his crops average 142 gallons per acre, and this is a paying crop. Vineyards at Belleville have produced large crops the last two years, I am told—and large profits.

H. T. Mudd: I cannot vote for the Catawba. It rotted, while the Clinton on the same ground was quite good. It will not do to work ground three to four feet deep and plant with Catawba to get a good crop every five years, when there are other varieties that give annual crops. I intend grafting all my Catawbas with other sorts.

Geo. Husmann: From what I hear we are to keep the Catawba because it is an old friend; but it is paying too much for the old friendship to take \$142 or \$200 per acre, when with the same labor we can get \$800 to \$1,000 per acre.

Dr. Morse: I said in this Society, two years ago, that I thought I had the ground that would raise the Catawba, and would escape the rot, in this dry, flinty soil; but here is the fault, they dry out and the leaves fall; this is the case with the Delaware too.

Geo. Husmann: I have planted out three and a half acres of vineyard, and have not planted a single Catawba. I may plant one for old acquaintance sake. It has been said we should not reject it for two bad seasons, but it has been twelve or fifteen bad seasons. This has been my whole experience with it while I have been a wine-grower.

E. R. Mason: A neighbor has a small vineyard of Catawba of three acres, and his average is \$300 per acre. I have put out five acres of Catawba, and will perhaps graft an acre or two with some of the new varieties.

DELAWARE. CONCORD. CLINTON.

Dr. Edwards: It is the best native wine I have tasted in this State.

CUNNINGHAM.

E. R. Mason: Knows it, tasted the wine, thinks highly of it. Secretary: Endorsed it also.

MINER'S SEEDLING.

Dr. Warder: Promises well for wine.

MEAD'S SEEDLING.

J. V. Hopper: I have had it for two years, had it along with the Catawba which rotted, and Mead's Seedling did not; think it a good table and market grape; ripens earlier than the Catawba.

John A. Pettingill: Four years ago I fruited it the first time. Mr. Husmann was on the Fruit Committee at the St. Louis Fair where I exhibited

them, and said they looked fine. Mr. Haven said they were Catawbas, till he tasted them along with his premium Catawbas, and pronounced them very good. Mr. Hazeltine introduced a resolution to the Horticultural Meeting held upon the Fair Grounds, that they were the "best table grape," which was finally modified and passed. I consider it superior to the Catawba. During the past four years it has been sound, while the Catawba has rotted beside it. I pressed three bushels, and got four gallons of juice from the bushel.

Secretary: Grew the Mead's Seedling; it was healthy, hardy, the fruit fine and quite distinct from the Catawba.

Dr. Edwards: I think it should be put on the list that Promises Well.

CHERRIES.

EARLY RICHMOND.

J. V. Hopper: I have had this in bearing for the last four years, and it has not failed to produce good crops; am now planting largely for market. It has this peculiarity of blossoming later than other varieties; it is hardy; forms a nice head; the fruit sour; ripens from 25th of May to 1st of June. It answers Downing's description.

John. A. Pettingill: I am fruiting the same variety, but I think too soft for market; if you get it to market will sell well.

J. R. Woods: It is extensively cultivated near Alton.

E. B. Coleman: I have a cherry (the Early May) which seems the same; it has been a good bearer in Peoria for the last twenty years. It is the only cherry that succeeds well—the Hearts and Bigarreus all fail; the trees crack open and die away.

Wm. Hadley: I have known both the Early May and the Early Richmond in the same nurseries.

J. Snedeker: I have cultivated it about fifteen years, and find it the most profitable I have tried. I have about fifteen or twenty trees in bearing, and recommend it in preference to all others. I start the head low, about three feet from the ground.

Jon. Huggins: I want to say a word in its favor; the Illinois Society recommend it as one of the cherries, with me the birds and children get the most.

COMMON MORELLO.

Dr. Warder: It is a native of the country and will take care of itself; it is richer than the one you have adopted; it is much richer than the Early May. It is my favorite cherry, and set down on the table with sugar, it is much enjoyed. Sometimes the children when they taste the fruit will look very much disappointed and say it is only the Early May.

J. R. Woods: Are Richmond and Early May identical?

Mr. —: I have seen the two cherries that are described by Downing, and they are certainly distinct. This one is the Early Richmond; it grows upon the prairies and is not the Early May.

Dr. Warder: The Early May at two to four years old is like an umbrella. The Richmond has this characteristic: its branches grow and fork at an angle of about fifty degrees. It grows from suckers. There is a feature in the Richmond leaves, and the bloom remains upon the stem; the length of the stem also distinguishes them.

BELLE DE CHOISY.

BARBER'S MAY.

Dr. Edwards: Do you know if this is the proper May?

Dr. Warder: There is no doubt of its identity.

MAY DUKE.

J. Snedeker: A good cherry.

RIENE HORTENSE.

ELTON.

Dr. Warder: It is the hardest of its character.

E. B. Coleman: Mr. Malinckrodt has had good crops here.

President: Have seen it in the East, where it had good crops.

John A. Pettingill: I have the White Tartarian on Morello stock; it never failed in five years; got \$6 a bushel for them in Chicago.

Dr. Edwards: There is a cherry in our markets far ahead of any cherry we have had up; large and dark; a German cherry, brought by a gentleman to Jefferson county; it has borne finely with him, but no one knew it. Dr. Cyrus Sappington has some of the trees.

L. D. Votaw: It was brought by Mr. Wm. Richter, of Big River, who has trees for sale.

Wm. Heaver: Black Eagle is a good cherry; Elton, good; Riene Hortense, Belle Magnifique, Governor Wood, Yellow Spanish. The seedlings raised by Dr. Kirtland, Osceola, Black Hawk, and there is Black Tartarian. They are somewhat liable to the winter scald, but this is remedied to a great extent by trimming the trees to a low head, and leave all the low shoots upon the trees; or, set a triangle of boards upon the south-west side. I have about thirty trees from seven to twenty years, and they have been managed this way. All sweet cherries must be protected in their stems. Dr. Kirtland's cherries are of all classes.

E. B. Coleman: These cherries are good where they can be produced: but, in selling a man sweet cherry trees, I feel as if I was swindling him out of his money.

Jas. A. Bayles: They do better on the Mahaleb stock.

Dr. Morse: I have seen the Black Tartarian in several places on our hilly soils; but in low, strong soils they don't do.

Wm. Heaver: It will only require some experience with the proper soils, locations and varieties, to get a good supply of this fine fruit here as well as in other places.

STRAWBERRIES.

Geo. Booth: I have not had sufficient experience to allow of preparing an Essay. I cultivate Longworth's Prolific, MacAvoy's Superior and Hudson. Cultivate in rows four feet apart, and then let them cover the ground two feet; cultivate between the rows; in winter mulch with dry straw, dry leaves, or long manure; manure is best if free from the seed of weeds. Like the MacAvoy best of any berry; there is a frequent objection that it will not ship; I ship to Chicago, Fon du Lac and other places, in good condition. Ship in trays or boxes holding half a bushel, made of cotton-wood, two feet by one, six by three inches, and cost about six cents. Tried the cases, but the express men don't handle them with sufficient care. The sides and ends are one-half inch stuff; the bottoms and tops in four pieces three-eighths inch. [Dr. Clagget: You can't buy the lumber here for that price.] I would rather pay double price for cotton-wood than pine, for in pine the nails will draw. The berries are picked by the quart for two cents. Produce about one hundred and sixty bushels per acre; which sells at \$3.50 to \$4 per bushel; pay fifty cents per bushel freight; nets about \$3 per bushel.

F. A. Quinette: My great implement is the hoe, not the pen. I cannot write an essay, but I can tell you how I cultivate. There are some things not generally known. Our best authorities tell us that the strawberry is of little value South, and of more value North. I reverse this.

First, You want an acid fruit in a warm climate—the strawberry is this fruit.

Second, the strawberry will bear in Wisconsin about ten days—in Louisiana about ninety days.

There is much difference in the soil and climate, and you must test the adaptation of the variety to these circumstances and vary the cultivation accordingly. I have planted the Wilson's Albany from six to eight years, and with me it is worthless, while with Mr. Colman about four miles off, but on a very different soil, it does well. Seven years ago, in Louisiana, I tried sixty varieties, and but few have succeeded—a variety from Germany does well. Plant in spring, and they will cover the ground; they make about three growths in one season, and their entire lifetime is past and only a few of the young plants

survive till winter to renew the grounds again. This German variety begins about the first of March, and we gather from it till the 20th of June. Some say they begin in January, but it is not so. My place is below Orleans in about 30°. I can cultivate and pick about four months—here from five to six weeks—and farther North ten days. Pay five cents a gallon at the commencement, and end ten cents. The season is about six weeks. The Iowa Male and Jenny Lind are three to four days ahead of the MacAvoy's Superior; Hudson Bay will pick about four weeks; MacAvoy and Wilson twenty days; Hudson Bay is a small berry. If I could plant only one Strawberry, it would be MacAvoy's Superior—with it Longworth's Prolific. I ship to Chicago and New York. Triomphe de Gand good in some respects, but don't think it so good as some others here. In the American bottom in Illinois it produces best, but is not so good in its flavor. Wilson's Albany is not adapted to high thin soil. Have cultivated in all shapes, and now do it in alternate strips. They have in some cases been continued on the same spot ten to twelve years. I thin out for good crops with the hoe to eight or ten inches, and let the leaves, weeds, &c., remain on the ground. In the spring, I take a line and lay off the ground three feet apart, and make a small alley twelve to fifteen inches, in which to stand and to gather the fruit. I break up the soil as deep as possible with a double-team plow; keep the roots as near the top as possible; draw the soil up to the plant and try to cultivate so as to kill out the weeds and grass; manure with lime, ashes, and a little salt. Haul them on in the winter, and spread them on the top. Salt keeps the soil moist. The yield is about 180 bushels to the acre. With common cultivation about 50 bushels. Mine are in the orchard, the shade injures some varieties. MacAvoy does well in the orchard.— Sometimes I run two furrows together and leave a foot in the middle untouched; the young plants run over, and take a hold, and then I turn them under. Mulching with saw-dust does well in some places, but here the plants mildew at the roots. I mulch with the leaves and weeds left upon the ground. The MacAvoy needs no care as to impregnation where there are many varieties and large plantations. I have three acres of Burr's New Pine, and there is no difference in the middle or edges of the strips. For staminate plants, I have the Iowa Male, Wilson's Albany, Longworth's Prolific. Plant each of them by the acre, and pay no attention to their impregnation; the air seems to get full of the pollen. They will not pay more than from two to three years more; the profits are being so low they will cease to be raised in such quantities; the average price is about ten cents a quart. I have made \$1080 from an acre in one season, but prices were better; have got \$1.10 per gallon. Plant in the spring when the frost comes out of the ground. I have taken them up in April, and got a good crop next season. Plant in March or April and there is no trouble.

Rev. J. Knox: I don't know that I have anything new on Strawberry Culture. I have talked a good deal upon this subject, and it has been reported, and published and read generally. I don't think we have reached perfection: there is much to be learned upon this subject; the attentive observer will learn something everywhere. I shall not give the botanical names, nor recite the sayings of the poets about this fruit.

When our Heavenly Father made the selection of fruit for the garden of Eden, the strawberry had a location there. I don't say it was the Strawberry with which satan tempted Eve, but to prove that it was not, would be a hard task; and if it was a strawberry—one of the large size, fine flavor, bright crimson color, polished surface of the Triomphe de Gand. I would make great allowance for Eve, and if Eve could not resist the temptation of the ugly serpent, and I think it was a poor idea of the gallantry of Adam if he could resist tasting it when it came from the lovely hand of woman; and if he could rest contented without tasting it he should have been turned out of that lovely garden at once.

The soil I prefer, is a clay on limestone sub-soil; a light clay; this is the soil I have, and the finest strawberries I have seen were from soils of this character. In its preparation I change according to the variety I plant, and the time I expect the plantation to last. Some varieties have to be removed frequently. I don't stir the soil so deeply. Some of my best strawberries had only plowing from eight to ten inches in depth. If I want a bed to last long

I stir the soil from 15 to 20 inches, and if necessary drain it. The soil is stirred with a common plow for two horses, and then a Mape's sub-soil plow drawn by two yoke of oxen. In planting I make rows two and a half feet apart, and set the plants ten inches apart in the rows. I have made some changes which I think valuable. If I plant strawberries alone, I plant three rows eighteen inches apart, the three rows take three feet of ground; I then have a hill between the paths two feet to give room to cultivate and gather. I planted about four acres of Concord Grapes in rows eight feet apart, between the rows of grapes but three rows of strawberries; this left two and a half feet between the grapes and strawberries. I cultivate these strawberries for plants so as to keep them distinct. My first crop from this ground is plants for sale in summer, fall and next spring. The second season gives a good crop of berries, and a few grapes. The third year I have a good crop of grapes, and the strawberries will pay for all till the grapes bear. I keep down the runners to get the fruit in perfection, of the best quality and largest size. I pinch off the runners to throw all the growth into the fruit stems; the runners take too much from the plant and injures the fruit next season. I never stir the soil after May, and the fibrous roots should not be broken; use the hoe as sparingly as possible, only to chop up the weeds; they are mostly cultivated by hand. I attach great importance to mulch, and think if mulch was more tried in the South they would be more successful. I mulch with straw; prefer rye straw threshed by the flail. In the fall it protects the plants; prevents them being thrown out by the frost. In spring the straw is removed from the crown of the plant and left off till fall. This keeps the fruit clean and it brings a good price. It keeps the ground moist and makes the plants bear much longer; the whole ground is covered. I think oat straw too light and short—put on before rain and there is no trouble with the wind blowing it.

As to varieties, I speak with caution in reference to this country. Mr. Quinette has referred to this neighborhood, and great attention should be paid to Mr. Quinette's views upon this—different varieties suit different localities.—Hovey's Seedling does well in some localities, good in Boston, but not at Pittsburgh. A variety that does well in a neighborhood at one time will not do well at another; and varieties run out. A few years ago the strawberry par excellence was Buist's Prize; large, beautiful and good; it has run out and is discarded; then there are different tastes, one likes it sour, another sweet; one prefers the Wilson, another the Triomphe de Gand; then there are those for family and those adapted to the market; there are so many difficulties in the way of deciding upon varieties. We want also to select so as to lengthen the season. At one time the season was two weeks, now it is lengthened to seven weeks, and I think it can be extended to two months. We can begin with Jenny Lind as the early variety, to Triomphe de Gand as a medium, and Nimrod to end with. Will give a list in their order of ripening [appended to the general fruit list]. Triomphe de Gand is an important variety, it is late, and it continues long. I regard it the best strawberry we have; the fruit is borne on long stems, which protects it from injury from the soil; none are more healthy than this; an abundant bearer, berries always large, large at the commencement of the season and large at the end; it is clean and beautiful, bright crimson color, clear surface, flavor is very good—this is the Triomphe de Gand with me. I don't say it will be so in every place; were I confined to one it would be this. I saw in reading the transactions of the Am. Pomological Society, that Mr. Hovey says, "he would as soon eat a turnip as the Triomphe de Gand." He had either not known this fruit, or he was very fond of turnips. Mr. Hovey I think denies having said this. It is due to this Society to say that the country is being flooded with new Seedlings. One party, in Flushing, publishes he has 250 varieties of new Seedlings. I am sorry to say I have tested many of these varieties, and failed to find any one of value, and I am sure that any one that invests in them will be humbugged in princely style. I appreciate highly the courtesy of this Society, and the honor it has conferred upon me. I have long read your proceedings with interest, and have been familiar with almost all of the members by name, and now that I have formed your personal acquaintance, your proceedings will be read with increased interest. I attend all meetings of this character when within my reach, not to talk and teach, but to listen and learn—and I always learn. I think these meetings

bind men more closely together. I think they teach us to feel we are a brotherhood, the children of a common Father, and I think if our unfortunate difficulties were left to such men as compose this association it would be but a little while when the swords would be beaten into pruning hooks. When I look upon your benevolent countenances, I wonder why we cannot find men who would heal up those breaches in our National Unity, and I trust the time is not far distant when our wars will cease, when the wilderness will blossom again as the rose, when these rivers of tears and blood will be dried up, and we will all be co-laborers to keep and to dress this garden of Eden.

In answer to questions: In reference to marketing—in New York I get fifty cents a quart wholesale. Make a proper selection of varieties, handle carefully, and bring into market in good condition, and there is little danger in overstocking the market. In regard to the only objection raised against my method (its expense), it is not how much outlay—but will it pay; and if it pays, the people are ready to adopt it. If I invest \$100 on the acre, and cultivate one acre; and you \$50 and cultivate five acres, and my acre produces more than your five, I have so much more profit. If my money brings one hundred per cent, the more money I can invest the better.

I market in boxes holding pints and quarts; I sent them in about one half bushel boxes, but they were so much bruised in selling out, they did not look nice. They are picked with care into the boxes, and they are not touched till gently turned into the tray or basin clean and whole. There are boxes made at Warren, O., light and cheap, that I like very much; one is set upon another and packed in crates holding twenty-four quarts or fifty-four pints—any communication through me will reach the maker.

Dr. Warder read a most interesting essay upon propagation, a subject that was treated in a manner to delight all who heard it, and will whet the desire for more literature of that class. It will be given to the public in a most useful form at an early date.

RASPBERRY.

N. J. Colman: I have had some experience in the cultivation of the Raspberry; have tried twenty varieties in this vicinity with but little success. The American Purple Cane has done well; hardy, and exceedingly productive; soft, juicy, with a good raspberry flavor. I have a variety in cultivation, don't know its name, the hardiest and best red raspberry. I prepare the ground well; plant them in rows five feet apart and two feet between the plants.—Mulch the ground. The red varieties are soft, hard to bring into market, but sell for seventy cents a quart, when the black varieties bring only ten cents.—Have raised the Catawissa, and think it a good family berry; a family can have ripe fruit during several months from fifty plants.

Rev. J. Knox: The carriage of small fruits has long been a mooted question. I desire to remark that in planting strawberries, I plant them ten inches apart in the row, and it takes twenty thousand plants to the acre; this will give over three hundred bushels of fruit to the acre; and Mr.—says the Triomphe de Gand has produced by actual measurement four hundred bushels to the acre. My favorite raspberry is Brinckle's Orange, it is the perfection of raspberry flavor. The Improved Black Cap brings me much money. It is only from the tips that it layers; some propagate from cuttings, but Mr. Doolittle's idea is from the tips alone. Franconia is red, large, and abundant bearer, bears carriage well, brings a high price in market. These three gives the best of the three colors—White, Red and Black, I have procured five varieties from the French nurseries. The Hornet is the largest raspberry I know, hardy, beautiful red, abundant bearer, good flavor. Pilate, same color, not so large, more solid, bears carriage better, superior flavor. As to the Everbearing Raspberries, I think they are of no account. The North River Red is not equal to the Franconia. I have cultivated hundreds of fruit I cannot recommend. I cultivated fruit without success for years. It is necessary to protect them in winter, it will not cost ten dollars an acre. One man lays a spadefull of earth to the root of the plant to support the bent place of the stem, another bends down the cane, a third covers with soil—two men will do.

Plant in rows five feet apart, two and a half feet apart, ground well prepared, and will stand heavy manuring; mulch to keep the ground moist; cut the canes to about three feet, and use no trellis; pull up all the suckers. The strawberry is the most profitable, but they do well together, and the same boxes, help, &c. do for all, and a regular succession of fruit is important from giving character to the cultivator. I employ women and children, takes about two hundred persons to gather my strawberries. To some pay fifty cents a day—find day work best. The fruit and plant are kept in better condition than by paying by the quart; many pick one hundred quarts; but seventy-five is good—some only fifty.

F. A. Quinette: From this, South, the raspberry is but little account; the summers are too long—except the Black Caps, you cannot depend on a crop. I cut them to three or four feet with a scythe; if they grow, cut them again; they make good lateral growth and don't fall down.

Wm. Hadley: There is two of my neighbors raise the raspberry, the Red Cane from Ohio. Mr. Garber finds them profitable; has raised \$300 worth from an acre. They have a red kind they say does well and sells for more than the Black.

E. B. Coleman: I have the Doolittle, it grows immensely in a season and bears tremendously. The only other I know that does well, is the Cincinnati Red. The yellow varieties don't stand our winters, because we will not protect them.

Dr. Long: I have raised the Brinckle, Franconia, Belle de Fontenay—last year it made a perfect forest. I dug out paths in it, and such a crop I never saw. I know from experience that the raspberry takes deep soil. The Ohio Everbearing does very well indeed. I object to so much pruning in the summer, it removes so many leaves, and so must injure the plant.

Jon. Huggins: I have not succeeded to any extent with any variety but the Ohio Everbearing; perhaps I am too careless, but I find this does well, and my customers bear me out in the statement.

BLACKBERRY.

Rev. J. Knox: The Dorchester is very good, valuable because of its earliness and sweetness; it is gone before the New Rochelle, and is sweet when the fruit turns black. It was cultivated as the High Bush. Should be planted in rows ten feet by five.

The New Rochelle requires to be left long upon the plant before it gets quite ripe; it should hang till it will shake off; it is usually gathered too early.

Geo. Booth: I think I have the biggest little patch I know. I have three rows one hundred feet long, and gathered one hundred and fifty bushels, and sold them at four dollars a bushel. Mulch very deeply with manure. The best berries are got close to the ground; cut them off at four feet in July or to the middle of August.

Rev. J. Knox: I think they would do well in this neighborhood; they should be deeply mulched.

N. J. Colman: I think it best to prune in summer; cut off at four feet with a sickle, and then have to go through and cut again. Rows eight to ten feet apart; let them grow up pretty thick in the rows; was surprised at the productiveness of my plants. Don't be particular about having a few canes.—I let mine form a hedge and the canes thus mutually support one another.—By this means I avoid putting up trellises.

E. R. Mason: As an experiment I planted out two acres two years ago last spring, one upon the highest ground, in light soil among peaches; the other upon low ground and no shade. In the shade of the peach orchard last season had a fair crop, and where exposed to the sun did not do well. The culture was the same. Got three times as much where shaded as where open. I think it takes more time to take care of an acre of blackberries than an acre of grapes.

John A. Pettingill: I have a large little patch of twenty-five feet; I gathered ten bushels for the family, and made a barrel of wine. It was heavily mulched.

Dr. Warder: I wish to direct attention to the fact that in every blackberry country there are as good wild varieties as the Rochelle. I have them in my field better, and when I send in my North Bend blackberry, it is taken eagerly always after the first time. In Illinois my friend Orange has got some fine light colored blackberries, the Crystal, Orange, Albion. I don't think them so rich as the others, nor worth while to do much with them.

F. A. Quinette: I have tried to cultivate the wild blackberry, but could never get it to bear.

Messrs. Colman and Woods had the same experience.

Dr. Edwards: The White Blackberry of Paducah, blooms prodigiously, but sets but small germs of fruit.

F. A. Quinette: The bloom is deficient—it is pistillate.

T. R. Allen: Before the Lawton came to notice I had the wild blackberry seven or eight years in cultivation, and they bore well.

CURRENTS.

Geo. Booth: I have not been cultivating long enough to say much about it; last year had the first of them to bear. The Cherry, large, fine, productive; Red Dutch did nothing; White Grape good. Plant in rows six feet apart; mulch; like three to four stems best, if one is killed you have some to fall back upon.

Dr. Long: I have been raising currants for some years; and made something not called wine here. There is no small fruit will pay as well the currant. Plant in rows six feet apart, and three feet in the row. Have tried tree pruning, but it does not bear so well as the bush; but you will get large, fine fruit. The common Red has been best with me; Cherry not a great bearer, but berries large. I cultivate with the plow, and turn a slice on each side to the plant, making a slight ridge then between the rows; keep the ground level and mulch. I have trees in the shade which produces as much as any others. The best mulch is chip manure. The greatest difficulty is a fungus growth at the collar of the plant on the stem. It will grow till it kills the plant; you must work this off, perhaps with the knife, and then apply ashes. The Borer will cut some of the stems. They sell in Chicago at from \$4 to \$5 per bushel—average \$4.50.

John A. Pettingill: For wine, the Victoria will be one of the best. Knight's Late Red comes in later than the other varieties. I am satisfied that those who plant out small fruit should plant in the fall, even if it is in the mud. I would rather have one-year-olds planted in the fall, than three-year-olds planted in the spring.

Dr. Warder: Every one should know that the raspberry makes its bud in the fall, and they should be planted in the fall (winter) or very early spring. The same with blackberry and the currant, although not to so great an extent.

Dr. Long: I have not been benefited by planting in the fall; I have had best success planting in the spring. I take up my currants in the fall, heel them in, and cover with straw; as soon as the ground will pulverize with the plow, I plant, and have always been successful.

Dr. Warder: I should have qualified what I said, by saying, in clay soils take care to mulch to prevent them being thrown out by the frost.

Rev. J. Knox: I like Cherry, White Grape, Victoria and Short Bunch Red. I manure with well-rotted stable manure; trim closely. I have had Cherry currants that measured two inches in circumference. Victoria is a large currant, short bunch; Red is a long bunch and good bearer.

GOOSEBERRIES.

Rev. J. Knox: The gooseberry does not mildew with us, not even the foreign varieties. The American Seedling does best for general cultivation; greenberry, about the size of Houghton, distinct from the Pale Red, being quite green. With the qualifications of Dr. Warder, prefer planting in the fall.

Dr. Warder: With regard to the propagation, what is the best time to plant?

Carew Sanders: Cut in the fall when the leaves drop; put in a trench till early spring, or plant out at once, and mulch to protect in the winter against heaving out.

Dr. Long: I would like to know from some gentleman what gooseberry pays the expenses of cultivation:

Dr. Warder: The Pale Red; gather with a little rake, bent like the fingers; made of strong wire, set so close as to catch the berries, all brought together and set in a handle; then clean in the fanners. The prices have, of late years, been low, and many about Cincinnati have rooted up their plants.

Carew Sanders: Some in St. Louis make them pay well.

Dr. McPherson: I have two acres to grub up. The Houghton Seedling—they mildew badly, bush and fruit; the first year they made a good crop, and done nothing since. Soil a rich loam.

N. J. Colman: The cause of this is want of circulation of air.

Dr. McPherson: Mr. Colman's reason is not sufficient, and there is no such cause at Mrs. Blakey's, and they mildewed there.

Jon. Huggins: I can't recommend any one to raise for market. I pick and clean nicely, and then I send them to market; get \$2 a bushel, which will hardly cover expenses.

N. J. Colman: In my experience they are profitable. I can ship to Chicago by express and make it pay. With the Houghton Seedling I can get \$30 to \$40 per day. Pay forty cents a bushel for picking.

John A. Pettingill: I desire to notice a gooseberry sent to me three or four years ago. Had it fruit two years, free from mildew, good fruit, large. It came from England ten years ago, and was put out in Northern Illinois; from that bush cuttings were obtained; berry three-fourths of an inch long.

THURSDAY EVENING

Dr. Warder: Read another of his invaluable Essays, which was of such interest, that it was thought better to wait a little longer and get it in full, than try to give a digest of it; but the Doctor assured us that there was a good time coming.

FRIDAY MORNING.

Meeting was opened by our indulgent friend Dr. Warder, by an Essay upon the "Spiral Theory of Foliation," as the basis of a knowledge of the correct principles of pruning, and the interest of that assembly of practical men, showed the vast importance they attached to the subject and how completely the author had mastered the beautiful system.

President Mudd was introduced to the Chair by ex-president Spalding.

Pears being in order, the following Essay was read:

ESSAY ON THE PEAR.

BY WILLIAM MUIR.

Mr. President and Gentlemen: So much has of late been written upon this important fruit; written so clearly and so well; written by such high authority, and that appeals with so much force to the judgment of the intelligent cultivator, that individually I would much rather have presented and read one of those recent contributions to this branch of Pomology, than taken up the time of the meeting with any views of mine, particularly when Dr. Warder's Essay in the Patent Office Report is before me, and its author so close by. The Executive Committee has, however, deemed this mode of original Essays the best method of bringing the several subjects for discussion before the meeting; and to their views I at once defer. It may not, however, be out of place to remark that this effort will fall very far short of an essay that will cover the whole ground of its subject, but will be rather the personal experience of an individual in his own more immediate locality, and from his own actual observations.

The subject is laid out by the programme of the committee into two grand divisions. Under the first division, that of varieties, we have two classes of pears—those for profit and those for taste. This division partakes very largely of a consideration of things that are, rather than of things to be. Of the present and already existing; rather than the progressive and future: in short, refers rather to the consideration of the trees already planted, than to the conditions to be met by the labors of the future planter.

In what sense do we here use the term taste? Not certainly as an abstract term, meaning simply the application of an article or substance to the palate; but rather proper appreciation of high excellence in the quality of an article. Not so much to the power or distinctiveness of its individual distinguishing aromatic principle, as to that higher sense of excellence which springs from the peculiar adaptation to the wants of the body and mind, which is so pre-eminently the distinguishing feature of some fruits, and is so lacking in others. This element can never be known but by experience; can never be experienced without being appreciated; can never be appreciated without producing the desire for the re-production of these pleasing sensations; and never have these sensations re-produced without producing a willingness in the mind to return full value for them. The fruit that contains these refreshing and invigorating elements in the greatest purity and abundance, will be found the most desirable and the most profitable, and the tree planter of to-day will find in fruiting his trees that profit and taste will become to a large extent convertible terms.

It seems truly surprising to find how much horticulturists have progressed themselves during the last few years, and how little credit they practically give to the community for progress. To-day size and color are the criterion of the majority of purchasers; and among growers these qualities, combined with firmness, to get them easily to market in good condition, united to productiveness, are the grand criterions of a market fruit. But is this not the very portico, the mere threshold of the grand Temple of Pomona? Is not this the rude efforts that characterize the beginnings? This is for the untrained mass—a something that all can attain with but little exertion, and springing from among these are some who would try to excel. The habitual use of an article trains the mind to comparison, and brings niceness of discrimination and correctness of appreciation, and is this aspect of the case the planter of the present day may miserably mistake the wants of society in five or ten years hence, and find, particularly in trees that take long in coming to maturity, that he has had too much of an eye to the profit of to-day and too little to the progress of to-morrow.

We throw out these hints with a view to check what may yet be found to have been a mistaken policy.

Judging absolutely from present experience, the pear to cultivate for profit, is the Bartlett. When the Madaleine and Doyenne d'Ete come to hand, the Bartlett is wished for—they can hardly sell, because they are not the Bartlett. When the Seckel and Rostiezer are in season, they lie unnoticed and despised. It is the Bartlett—only the Bartlett—that will sell; and when the season comes for such varieties as the Beurre de Angou or Winter Nelis, the purchaser is perfectly lost for want of the Bartlett. To take home of an evening as you pass the fruit stand, or hand to your sweet-heart anything so small and unpretending as the Seckel, Rostiezer, or Nelis, is a mark of the smallness of your soul; so the fashionable pear is the Bartlett. The only variety for profit is the Bartlett, and ingenious minds must cast about for a method of giving absolute perpetuity to the Bartlett. We would not try to discredit the Bartlett, to hint that there was anything at fault as a tree or fruit, but would simply suggest that by dint of close observation and continued experience there might be found some good quality in such varieties as Doyenne d'Ete, Tyson, Seckel, Rostiezer, White Doyenne, Louisa Bon, Flemish Beauty, Des Nonnes, Beurre Bosc, Golden Beurre, Glout Morceau, and Winter Nelis. Some place might be given to them for their high intrinsic excellence, and because their merits will assuredly give them their proper place in the esteem of the purchasing public.

It may not be out of place to notice a danger in over-praise as well as neglect; this has been to an extent the case with the Seckel—planters have rush-

ed into its cultivation with hot haste, and the public being led by the eye and not by the judgment, have been disappointed with its appearance.

In the planting out of standard trees, in particular, I would have the healthy, hardy character of the tree itself as the first item for consideration, and the high qualities of the fruit the next in the choice of varieties.

CULTURE.

1. Propagation—The pear is propagated by budding and grafting upon the quince stock for dwarfs, and on pear stock for standards—all varieties do not work or fruit alike upon either stock.

The quince seems to operate favorably by checking the tendency to wood growth so remarkable in the pear, and, by its mechanical force, retarding the flow of sap, causes it to form fruit buds earlier than on the freer pear stock; which process in some varieties likewise aids in the development of the higher qualities of the fruit. Some varieties will not unite, or but imperfectly, upon the quince.

As to the best variety of quince to work upon, I have tried to find out upon which variety my trees have been worked, and they seem to be upon all and every variety that comes to hand. The *Angers* is said to be the best, but the superiority seems only in favor of the nurseryman, from being more easily propagated. The seedling Pear stocks are rather hard to raise, being liable to blight, and are generally obtained from France. It seems to my mind that in raising standards it would be well to try, to a larger extent than is practised, to work the variety on its own seedlings, as tending to aid materially in forming perfect union and giving the true character of the fruit.

2. Selection and Preparation of Ground—the high level ridges in our State are best adapted to the pear, and if the slope is inclining gently to the North, so much the better. Nothing is lost in the thorough preparation and deepening of the soil and under-draining. It is not meant to enrich it with strong soil or heavy manuring, but thoroughly deepened and partaking of the character of a free, clay loam. Thorough deepening and draining the soil, will increase the certainty of the crop. In our climate the summers are generally very dry. The pear ceases its growth very early, shed its leaves, and is thrown into a state of rest. If heavy rains come in the fall, its growth is renewed, the tree blooms and the buds are exhausted, and the crop of fruit for the next season cut off; and if the weather keeps quite warm, it makes new growth which is destroyed—this occurs where the soil is too thin and light. Deep culture prevents its being so early affected by the drouth or by the late rains, and draining takes off the water that would remain in such quantity at the roots as to injure them.

3. Planting—Close planting is recommended for all fruits, from its economy in the first and subsequent cost of land and labor, and because it shades the ground better—and labor is hard to be obtained. Small plantations well managed, must be the motto. The *Quincoux* mode as described in "*Field's* in his *Pear Culture*," and by Dr. Warder in the Patent Office Reports, is best, and the alternation of a dwarf and standard in the rows and an entire row of dwarfs every second row, so that when the standards are in full bearing the dwarfs will be done, we thus secure the early bearing of the dwarf and the full crops and longevity of the standard tree.

4. Cultivation—Keep the ground clean; if the soil is naturally thin and has not been deepened, mulching will be much better than stirring the soil.

5. Pruning—Get young well-grown trees, one year from the bud, maiden trees, and but little pruning will be needed. Prevent bad forms of growth by close attention to the early development of the tree, and there will be but little to cure.

6. Diseases—That which may be characterized as the disease of the pear is the blight. The cause and remedy for the blight is still a matter of conjecture. The insect theory has many supporters, and I largely favor that view. I have had two cases in which there was the evidence that mechanical disturbance of the sap produces the same effects as the blight. My trees have been very free from the blight; but have seen much of it with some others. I had a white *Doyenne* grafted upon *White Thorn*, growing in the yard; in the summer a young calf was put in the yard which tried its new teeth, but a very

little at a time, upon the pear two years from the graft; the injury was but slight—a little nibbling, bruising and crushing of the bark and tips; it became affected with all the symptoms of the blight, and is now killed down to nearly the ground by the blight. I had another case upon quince, that was pinched from having to take the horse past it in working at another part of the ground; he would taste as he passed, and ultimately killed the tree at about four years of age, of something having all the appearance of the blight. Mr. F. Braches, of Gray's Summit, an extensive and pains-taking cultivator and very close observer, has long held that the blight was caused by an insect. He has labored for the last four years to satisfy himself if it was a creeping or a flying insect, and last year came to the conclusion that it was a flying insect, and that it was for food and not to deposit its eggs; and thinks it a biting and not a sucking insect—his truly beautiful dwarf pear orchard last year presented an appearance from the blight almost as disheartening as the rot upon the grape—his land is high, well cultivated, and carefully managed. Others in our neighborhood have suffered in a less degree: and its fatality is only equalled by its unaccountability.

John A. Pettingill: I would like to ask if any one has tried lime as a preventive or a cure of pear blight?

Dr. Long: I wish to speak upon the pear, particularly upon the idea, that "the more thoroughly the ground is prepared for the pear, the better." I don't think that this assertion is true. I began to cultivate pears about twenty-four years ago, tried many methods and manures, and like the child killed them with kindness—and in grounds that were not cultivated they last to this day. I set out some pears in my lawn among sapling oaks, and the best pears and trees are there on ground never disturbed.

Oswego Beurre, a rich, fine pear; Beurre Diel, fine tree and fruit. Have tried bones; they must be put very deep or they will cause the trees to dry out. In regard to the form of the tree they are not the same at the West as the East and there is as much difference in the fruits. Beurre Gobault is a fine pear in my orchard.

Dr. Warder: Was much pleased with the essay; there are choice varieties that don't need to be dwarfed for early bearing.

Mr. Whitney, of Ill., branches his trees low because the sap then has not so far to go, and gets standards to fruit very soon. Standards grown as conical trees, with pinching and root pruning are almost as early as dwarfs. Some varieties as Onondaga and Flemish Beauty are very early.

Dr. Long: Winter Nelis is a very fine pear.

Dr. Warder: It has kept well with me, but I find that if put in a dark drawer they ripen too early. Easter Beurre has not been satisfactory with us.—They don't develop the blossoms.

Special order for the report upon Summer Pruning.

SUMMER PRUNING.

BY DR. H. CLAGGETT.

[NOTE—The following report was not prepared with a view to publication, but was the partial report of Dr. Claggett, as chairman of the committee of the St. Louis Horticultural Society, upon the best time for summer pruning, with a view to the immediate healing of the wound, the experiments being of a thoroughly practical character and so conclusive in their bearings upon the subject, as exhibited in the operations of 1862, that a number of the members requested Dr. C. to read his report so as to explain a set of specimens cut from the trees experimented upon, which were presented to the meeting to illustrate the progress of the deposit of alburnum over the wound at different times during the season. It is much to be regretted that wood cuts could not have been prepared to illustrate the text. In a note, Dr. C. says, that the experiments only go to show the operations of the sap at the times named. Whether the same processes can be observed at the same time of every year, or whether the periods of the motions of the sap may vary—has to be tested by farther observations; but the order or sequence of the operations will probably be found

determinate. The report is not intended as a theory but a recital of facts that may direct others to experiment in the same direction, so as to verify or modify the indications as here presented, and so give them value and completeness.—Similar views led the society to request the paper for publication with the other proceedings.—Sec.]

The committee to whom was assigned the duty of prosecuting a course of experiments on pruning, report that, owing to the extraordinary state of the country and the suspension of the meetings of the Society during the season the experiments should have been performed, the co-operation of the committee was so interrupted that the chairman was unable to obtain any assistance from the other members of the committee, and though he has been unable to give the subject the attention he desired, he has not wholly neglected the duty.

The chief points to which the attention of the committee was directed, were to ascertain at what time a wound from pruning would heal most rapidly and produce the least check to the general growth of the tree. We first sought to ascertain at what period the sap would be in the highest condition for healing the wound. To that end, we peeled the entire bark from branches from four inches to a foot in length, as often as once a week, from early in May until September, and also pruned off branches with the following results:

All the limbs peeled before the ninth of June died; those peeled on that day were partially re-coated with new bark on the upper portion of the wound; those peeled on the sixteenth and twenty-third of June were completely re-coated with new bark; on those peeled on the twenty-eighth of June there was a partial coat of new bark deposited, the heaviest on the lower portion of the wound which may be seen from the specimens herewith presented, showing that the bark was deposited from the descending sap.

We peeled on the fourth of July, and no deposit of bark followed, and none till the fifteenth of August, when there was a slight deposit on the shaded side, which continued until the twenty-fifth and none deposited on any peeled after that time.

The wounds from pruning made from the sixteenth to the twenty-eighth of June commenced healing immediately; those pruned on the first named date healed most rapidly; those pruned from the fourth of July to the middle of August showed no signs of healing. Wounds made from the middle to the twenty-fifth of August healed, but not as well as in June; from which it would appear, according to last year's experience, that a wound will heal most rapidly from the fifteenth to the twenty-fifth of June, and that we should avoid wounding a tree in May, July, and the early part of August.

We also noted that before the period when there was a renewal of the bark, there was a suspension of the growth at the extremities, and that a second growth at the extremities commenced again in July, indicating that the growth at the extremities and at the body of the tree is not going on at the same time but alternately.

Shall we content ourselves with collecting facts and classifying effects merely, or shall we by a generalization of facts and analogies, seek a better knowledge of the moving causes, and trace their operations to their ultimate results, that we may the better harmonize our operations with the operations of natural laws? It is only by so doing that we can become good husbandmen, and reap the full reward of our labors.

The way on this subject as well as that of morals, is narrow—but broad indeed is the road that leads to the death of our trees. It becomes us then to be careful to know why, when, and how, we use the pruning knife. Kind nature may do much to overcome and cover up our errors and the injuries we inflict on our trees; nevertheless, we cannot entirely escape the penalty due the violation of her laws—(a deficient or defective crop of fruit and often the premature death of the tree).

Our knowledge of vegetable physiology is yet but limited, particularly the laws governing the circulation and assimilation of the sap. We know that the tree is composed of elements gathered from the earth and air. The roots gather from the earth, and the leaves from the air, but by what agency those elements are brought together, combined and appropriated, is not positively known.—The difficulty of getting positive knowledge on this important part of the sub-

ject, arises from the subtil and occult nature of the agency the Creator employs in the work; but while we may not be able to demonstrate to the external eye the law and its operations, we may by rational deduction from the known, make manifest to the mind the invisible and otherwise unknown. Much that lay shrouded in mystery for ages and believed to be incomprehensible, is now clearly understood. We are, therefore, encouraged to pursue our investigation on this interesting subject, believing that there is yet much important knowledge attainable, and that that which may now be but dimly shadowed forth, may in due time be clearly seen.

If the deductions we are encouraged to offer should not prove true in every particular, they may serve as a useful hypothesis to tie our present facts together, and provoke farther and deeper investigation and reflection, which may ultimately bring the truth to light.

From all the facts before us we conclude that the circulation of sap in the vegetable, as well as the blood in man, is carried on by the positive and negative electrical conditions, and that the same principles of attraction carry the pollen from the stamen to the pistil in the flower. Indeed, it is this law of minus and plus, or want and supply, which carries on the commerce of the world.

In the vegetable seed is stored up the most refined and concentrated essence of vegetable life electrically positive.

Electricity has an affinity for moisture, is condensed by cold, and diffused by heat. When the seed is placed within the influence of the earth, heat and moisture, water is absorbed, and as soon as the elements of the seed become sufficiently fluid, life becomes manifest by motion, the volume enlarges, bursting its shell; the surrounding elements which are to become its food being negative to the life germ by their mutual attraction they tend to approach each other, and currents of cellular tissue stream forth from the life germ, in the form of roots with open mouths (though protected with a porous covering) to receive the approaching food by the reception of which the life germ becomes negative to the positive elements in the air for which there is now a demand, and a jet ascends unfolding in the form of leaves to receive them, breathing the breath of life. Thus the elements, drawn from the earth, ascend, seeking the life-giving and life-supporting elements in the air; they meet and unite in the leaves by the union of the elements from the earth with the elements from the air; vitalization goes on, the cruder portions that are unfit to enter into life (and for which there is no attraction), are set free and escape, while the vitalized elements being in the highest degree positive, seek and are attracted to all parts of the comparatively negative body, building it up with living tissues. This process goes on creating and establishing every organ proper for the performance of every needed function.

Thus organized, the body with all its members goes on making increase unto itself, till it has perfected itself in seed to produce like bodies in like manner by the same law.

Perennial trees store up assimilated sap in one season with which to commence the growth of the next, and to set the fruit when the tree has reached the bearing condition, and the amount of fruit that will set depends upon the supply of assimilated sap prepared the previous year for that purpose—for the elements drawn from the earth cannot enter into living tissues till they are vitalized by the elements received from the air through the leaves. This is demonstrated by the failure of our grapes to mature after the leaves have been destroyed, and a careful investigation will show that a much larger amount of the first growth in spring is from sap prepared the previous season than is generally supposed. The amount of saccharine that may be drawn from a sugar tree early in spring, will convey some idea of the quantity of assimilated sap a tree contains when the spring growth commences.

The limits of this report will not permit the statement of all the facts and arguments that might be adduced in support of the positions assumed. We will only refer briefly to a few—many others will suggest themselves to the reflecting mind. It is a well established fact that solid metal suspended from the positive pole of a galvanic battery in an acidulated liquid, will be decomposed, carried to and deposited in the form of solid metal on the negative pole. This establishes the power of the positive and negative electrical for-

ces in decomposing and re-composing materials. But in the growth of plants and animals we do not wish to be understood as under-valuing the power of vitality in electing its appropriate food, and in rejecting that which is unsuitable for its support. But that electricity is an important element in sustaining vitality, and is used as an agent in drawing to it other elements necessary for its support—that life is a positive condition and that there is a like attraction between the living seed or plant and its negative food in the earth—this attraction is shown by the raspberry plant bending to the earth and taking root from the top, and also in the strawberry plant, where runners pass over moist ground, they form joints and strike root, rapidly forming new plants; but when they pass over a dry, hard-beaten path, no joint or roots will be formed till it reaches moist ground, when joints will again be formed and roots sent into the earth. The same thing takes place with the sweet potato vine. This habit of the strawberry and sweet potato vine also illustrates that the growth of the roots takes place from the return flow of the sap, for as soon as the runner takes root (which is at the first leaf), the mother plant stops growing, because the materials vitalized in the new-formed leaf send roots to the nearest point of attraction, but if the runner is not allowed to take root, the growth of the mother plant continues.

In attempting summer pruning, it should be borne in mind that every branch of the tree is engaged in assimilating the materials drawn from the earth and air, and returns to the body of the tree and roots its quota of assimilated material, and that growth at the roots can only take place from materials that had been previously assimilated in the leaves. Every branch therefore, that is removed, while this process of assimilating and returning sap is going on, will to that extent check the general growth of the tree, and that while a wound may heal more perfectly at a certain time during the growing season, pruning at that season should be done with caution and only to a limited extent, and that shortening back should not be done at the same time in summer that side pruning is done (if done in summer at all), because the wound at the end of a limb cannot heal till a new branch is sent up beyond the wound, to prepare and send back the material for that purpose.

This is not intended to apply to pinching back the young, soft growing shoots, but to matured wood. The growth at the extremities of both roots and branches is at first composed wholly of porous cellular tissue, and is matured by the deposit of lignine from the descending sap. The first cellular growth is from partially assimilated sap, and the porous condition in which it advances admits the air, which completes vitalization and renders it competent to close the wound, which is not the case but to a limited extent if at all in the matured wood. It would, therefore, be better if much of our pruning could be done while in that purely cellular condition, especially the removal of all unnecessary sprouts as soon as they appear.

My attention was particularly drawn to the effect of removing matured wood from the tops of some young pear trees in May last. They were bitten off by a horse, while plowing. They died back some distance below the wound, and made but a sickly growth the remainder of the season.

On the relative merits of winter and summer pruning of matured wood, your committee is not prepared to give a decided opinion, but would earnestly recommend that the investigation of the subject be continued, for if we would be successful fruit growers, we must develop a system adapted to our peculiar soil and climate. The *Lex loci* must govern our practice, for it is clearly manifest that the most successful method practiced in the humid atmosphere on the island of Great Britain is not adapted to our Western Prairies, nor is it certain that the practice most suitable to our Atlantic Coast will be the best for the Mississippi Valley.

H. OLAGETT, Ch. Committee.

PEAR BLIGHT.

Jno. A. Pettingill: The cause of this blight is not satisfactorily explained. The fact that I presented to this Society at a former meeting, still proves a certain remedy. It is this: wherever I see the blight, I take a spoke-shave, or some such instrument, and carefully shave off all the outside bark from the limbs and trunk of the tree affected, and its spread is instantly stopped.

I cut down to the cambium; do it at any season without any regard to the flow of the sap—as a usual thing the tree is saved. There is a spot at the commencement of the shrinking of the bark, from the size of a five cent piece to the size of the hand; this spreads; and when this indurated bark is removed early, no evil consequences ensue. From trees thus treated, I have shipped as much as \$10 worth per tree, and found them become perfectly healthy. Where the blight takes the limbs, the water-bark, and even the inner bark, becomes diseased and is red in its color, instead of green. Was more trouble last summer than ever before. I have kept data in regard to the time of commencing, and think from memory it is about the 25th of June. The extremities become all killed, and sometimes (from the time of observing the first specks) in two days the whole limbs are killed. No fear that I know is entirely exempt from the blight but the Buffum. On a Belle Luerative that was spotted, I cut off the bark below the spots, and the limbs died down to the cut place, and below the stripped piece it was healthy.

Dr. Claggett: This is a most interesting subject, and the information is invaluable. The blight seems to render the bark bound. I had a case in point, in which I removed the outer bark, and new bark came on and the tree did well. This tree, part of which I now hold in my hand, was a most healthy tree. In June my attention was called to it by the lower leaves withering. The sap was oozing out and running down the body of the tree. I tried the experiment on the larger part. The upper portion matured its fruit much larger than any tree of the kind on the ground, and the rest of the body entirely died. My own opinion agrees with that of Dr. Long, that the most thrifty trees are most liable to blight. There is a theory that I have much faith in, that the injury is done in the winter previous by the rupture of the sap vessels, and the destruction of the integrity of the tissue of the bark. It dries and will not expand to meet the growth of the tree in the strength of the growing season. The tree becomes bark bound, the sap stagnates, and by its fermentation destroys the tree; and this accords with what Mr. Pettingill told us last meeting, and has now repeated. In the case in hand, there was no healthy bark under the outer bark—it all had the appearance of rusted iron. I think there are several kinds of blight.

Special order for essay on timber trees.

ESSAY ON TIMBER TREES.

—BY JONATHAN HUGGINS, WOODBURN, ILL.

In accordance with your kind request that I should write an essay on "Timber Trees," to be read at this meeting, I will endeavor, in a brief manner, to throw out a few thoughts on the subject.

I approach the task assigned me, with great diffidence, and feel that one with more leisure and ability should have been selected to accomplish it.

I need not enlarge on the great utility of timber trees.

In the great West, where we may often travel many miles without meeting a single tree, an immense amount of timber is required for fuel, fencing and building purposes—and may I not add, for shelter and wind breaks around our orchards and dwellings. "A treeless plain, how fatiguing to the eye, while the woods embellish the landscape."

While the great desideratum of our prairies is the want of timber trees, our timber is fast disappearing from our streams, and the lines of our railroads. To rob a country of this ornament, to destroy whole forests of useful timber, it seems to me, not only shows a want of good taste, but an abundance of heedlessness which does not care for the future.

Much rather would I teach that every farmer, who may be the fortunate owner of timber lands, should not only reserve a portion thereof from the woodman's ax, but improve them by planting out such varieties as experience teaches succeed best and are of greatest value.

Were our prairies planted with extensive belts and groves of fast growing timber trees, doubtless the rigors of our climate would be greatly moderated, and become really, and in truth, the finest on earth. I would then that every

farmer, and especially every prairie farmer, should plant timber trees.

In the language of an eminent horticulturist of Illinois, I would "Exhort, urge and importune, prairians to plant groves for their own sake, for the sake of their children, for their neighbors, and for the prairie world at large—for the present generation, and especially for posterity."

The difference between wintering stock in a sheltered situation, and those treeless farms we so often find far out on our bleak prairies, is often fifty per cent. in favor of the farm well protected by timber trees. In short, the shelter, and consequent comfort and happiness to man, beast and bird afforded by groves of timber cannot be enumerated in dollars and cents.

Of the many varieties of trees, natives of the Mississippi Valley, time would fail me to speak. I shall, therefore, only speak of a few native varieties of fast growers, including, perhaps, one or two of foreign origin:

Locust—*Robinia pseudo-cassia*. White Elm—*Ulmus Americana*. Red Elm—*Ulmus fulva*. Cypress—*Taxodium distichum*. Larch Am.—*Tamarix Americana*. Larch Eur.—*Tamarix Europea*. Tulip—*Liriodendron tulipifera*. Black Walnut—*Juglans nigra*. White Walnut—*Juglans cinerea*. Sugar Maple—*Acer saccharinum*. Scarlet Maple—*Acer rubra*. Silver Leaf Maple—*Acer dasycarpum*. Golden Willow—*Salix vitellina*. White Willow—*Salix alba*.

The common Locust is too well known to need description. It is a fast grower, and easily propagated by seed. It has of late years been greatly troubled with the borer, in some parts of the West, and is objectionable on that account. I do not recommend it. Better, however, plant it for timber and shelter than to plant none.

The Oaks may easily be grown from the seed. Gather and plant the acorns, as they drop in the fall, covering them lightly. With good cultivation, they will make a good growth, and any farm will be improved by their presence. Of their valuable timber qualities I need not speak.

The White Elm is the great shade tree of Boston Common. It is a rapid grower under good cultivation, and a beautiful grove tree. The seed falls the same time as the Silver Maple, and should be gathered and planted in the same manner.

The Red, or Slippery Elm, is also a fast grower, although it does not attain the magnitude of the White Elm. Propagated in like manner.

In our low grounds the deciduous Cypress would be valuable. It is a rapid grower, and in its native southern swamps a tree of magnificent proportions. It is easily propagated by seed, which in past years could be obtained at most of our seed stores. The timber is of value for shingles, posts, &c. It makes a beautiful appearance in summer, and should be found in every grove in this latitude. In the North I think it would hardly succeed.

The Larch is spoken of highly by some as a fine timber tree, particularly the European, which it is said will thrive in any soil. The European Larch may be obtained of most of our nurserymen, and also the American, which can also be obtained very cheap from their native grounds.

The Tulip tree is one of our tallest trees, valuable for many purposes, but thought, by many, to be impatient of removal, and hard to grow from the seed.

The Black Walnut, and the Butternut or White Walnut, are fast growers when under cultivation; hardy; and if they are ever troubled with insects I am not aware of it. They are easily grown from the seed, which should be planted in the fall where you wish them to grow, as they are very sensitive of removal. Both varieties are valuable for their fruit and timber, and should be found in every grove.

The Sugar Maple, or Hard Maple, as some call it, attains a great height, but is a slow grower as compared with the Silver Leaf Maple. It is valuable for fuel and many other purposes. The seed drops in the fall, and should then be planted, or carefully kept from drying until spring.

The Red or Scarlet Maple, naturally found in swamps, will thrive in any soil—is a fast grower, and, in favorable soils, attains a height of eighty to ninety feet. Propagated like the Silver Maple.

The Silver Maple has been spoken of as one of the finest trees on the American continent. It is the great grove tree of the West, unless, as some sup-

pose, the claims of the White Willow are superior to it. It is a rapid grower and splendid tree. It has long been desirable that some timber tree should come into general cultivation, containing the essential qualities of beauty and rapidity of growth, and at the same time be free from the ragged appearance of the borer-eaten Locust. The Silver Maple, thus far, answers that purpose. It is valuable for fuel, and yields a fine, soft-grained timber, useful for many purposes. Its seed drops in this latitude about the first of May, say from the first to the tenth, and should be planted at once. Seed planted in good ground and well cultivated, will grow from one to four feet the first season.

The Golden Willow is a fast grower, and should be planted in every prairie grove. Easily propagated by cuttings.

The White Willow seems to claim a large share of attention at present, as a grove tree and for fences.

C. R. Overman, ex-President of the Illinois Horticultural Society, writes of it thus: "We have found in the White Willow a clean, healthy and beautiful tree, perfectly hardy, and free from attacks of insects. Grows towering, straight grained, and enormously rapid; splits as freely as the Chestnut. Rails of it, above ground, last many years, while as a fuel timber, its value cannot be over-rated, as it makes the best charcoal in the world. The amount of fuel which a single acre of this timber would yield in five or ten years, would astonish any man. In ten years, an acre of it will produce enough timber to fence a quarter section of land. It is without doubt destined soon to become the most popular grove tree in the country."

This, like other willows, is easily propagated by cuttings. I have now a few of them on my grounds fifteen to eighteen feet high, two years from cuttings.

In considering the subject of timber trees, our evergreen timber trees should not be forgotten. They should also be planted in abundance for timber as well as for ornament, and for wind-breaks for our homes.

The White Pine is a rapid grower, and so is the Norway Spruce. Small plants of both may be obtained of many nurserymen very cheap.

The Red Cedar, as also the White Cedar, is hardy and desirable for planting in belts as a barrier against the sweeping winter blasts. They are both easily obtained from their native grounds. The White from the swamps of Michigan and Wisconsin, and the Red Cedar from southern Illinois and Missouri.

But I fear I have already wearied your patience, and shall add but little more.

To some it may seem very foolish to engage in the cultivation of timber trees, which the planter can hardly expect to see come to full maturity in his life time. But I cherish the hope that at no distant day, our now bleak prairies will be thickly dotted over with groves of timber trees, both deciduous and evergreen, and belts of trees will everywhere protect our orchards and homes.

Let us, then, plant trees—plant timber trees, and care for them afterwards. Plant them for ourselves and for our children, ever remembering that we should not live exclusively for ourselves or for the present time—that it is right and proper to look a little to the interest of those who shall come after us—that when we are about to leave this world, we can reflect that things are by our feeble efforts, in a better condition than we found them when we entered it.

PEAR BLIGHT—CONTINUED.

N. J. Colman: I have about 400 trees set out upon rich soil, trenched about three spades deep; they grow very finely, and have suffered less from blight than any equal number of trees that I know of in the West. I think dwarf pears should be planted upon rich, not thin soil. I recommend rich soil, well worked.

Dr. Long: I have been much acquainted with the blight referred to; it is a kind of dry mortification. I draw my knife through the bark and apply ashes to it, and some have recovered; this takes place near the collar of the tree. This blight upon the tips is after a heavy growth, heavy rain and hot sun.

E. B. Coleman: I had the experience of this blight in a similar manner.

Dr. Warder: We know so very little about this scourge it is almost impossible to arrive at any just conclusion respecting it. Sometimes we have a theory of frozen sap; but we have the very same symptoms in the seedling of the first year, when the plant was yet in the seed at the time of frost. We may be mistaken as to the disease, or its perfect identity. The insect theory is equally unsatisfactory, and I think we know just little or nothing about it as yet, except its existence. There is the Howell pear; I have cultivated it to some extent and am much pleased with it. I think it might safely be put among those that promise well. The Lawrence the same.

BUFFUM.

Dr. Claggett: It is a large pear, not to be compared with some in point of flavor, but is more free from blight than almost any other.

Dr. Spalding: In making out this list of pears it is certainly important to present healthy trees. It is perhaps questionable to recommend any pears for general cultivation that are dwarfs.

SWAN'S ORANGE—Standard.

W. C. Flagg.

Dr. Claggett: Handsome, not equal to others ripening at the same time.

Dr. Spalding: Large; am in favor of putting it on the list.

John A. Pettingill: Have seen it and thought it good.

DUC DE BURDEAUX.

E. B. Coleman.

October. Upon the list that Promises Well.

Adjourned.

WM. MUIR, Sec.

APPENDIX.

ESSAY ON THE GRAPE.

BY GEORGE HUSMANN.

Mr. President and Gentlemen: Being informed but yesterday evening that your Society had honored me with a demand for an Essay on the Grape, I have endeavored, not to do the subject justice, for such you cannot expect from a soldier who has been absent from home from the pursuits he delights in, for over eighteen months, and has therefore necessarily become somewhat estranged from them, but to give you at least an outline of ideas such as I have formerly gathered and followed when our beloved country was at peace and every one of her citizens could follow the pursuits that he loved best. Were not the subject so near my heart, I would not have presumed, at so short a notice, to undertake the task at all, as it is, you must take the will for the deed, and lay any and every defect, not at the door of the subject itself, but at mine.

The Grape! What ideas and recollections does not the name alone of this noble fruit call up in the mind? From the days when, if we follow Holy Writ, the first vine was given to Noah by the Lord, to the present day, it embodies the idea of joy, of festive hilarity, as one of the most precious gifts of our bountiful Creator. At the wedding of Cana, our Savior himself changed water into wine; in the days of ancient Greece and Rome no festival was considered complete without the juice of the noble grape; in the days of chivalry a cup of sparkling wine touched by the lips and presented by the hands of beauty, was a precious gift to the bold knight; it inspired the minstrel with songs of love and knightly deeds; and even in our own degenerated days it is considered the drink of all others to promote innocent joy and hilarity.

If the apple is the daily necessary of life among fruits, in the noble grape we find its luxuries, the quintessence of fruits. I would, therefore, call it the king of fruits, the only monarch, by-the-by, which I would wish to rule in this Republic. It is not nearly related to any other fruit, simply, I suppose, because none can come up to or near it in excellence. Let us hope that the time may come when every American citizen can at least sit under his own vine, if we cannot enjoy the fig trees. And he can do so if he tries to. Look at this glorious country, from Maine to California, examine into the experiments made with the vine, and we will find that some varieties of grapes will grow, flourish and ripen their fruit everywhere. But it is our own favored West, to which the privilege seems given to produce this noble fruit in its greatest perfection; and in the West again, our own State, Missouri, seems to be the best adapted to the extensive cultivation of the grape. Geological surveys have shown that Missouri alone possesses more locations adapted to the culture of the grape, than all France, Italy and Germany put together.

Grape growing is, with us, yet in its infancy. It was in 1845 when the first cultivated vine was fruited in Hermann (an Isabella) and first attracted attention by its bountiful crop. Experiments were made, first with a few vines. When they came into bearing, and did well, the Catawba was introduced from Cincinnati, and several acres were planted. In 1846, the first wine was made, and astonished all by its quality. In 1848, the few small vineyards of Catawba and Isabella, then in bearing, gave an enormous produce, and a perfect rage for growing grapes, as a sure source of riches, took possession of our sober, steady citizens. Vineyards were planted any and everywhere without regard whether the location was north, east, south, or west, and all expected rich returns.

But a series of reverses followed. In 1849, the Catawba first showed

its true fickle character. Mildew and rot made their appearance, and two-thirds of the crop was swept away in a few days. 1850-'51 were still worse, and the vineyards produced next to nothing. Bad locations, people found, would not do; bad pruning and mismanagement also did their share, and grape culture as a general branch of industry was at a stand still. The greater part were discouraged, only a few of the most persevering wine growers still kept on experimenting indefatigably with the Catawba, trying different treatment, with more or less success, but could not find a complete remedy against the prevailing diseases.

It was about this time that a few vines of Norton's Virginia, which had been brought from Cincinnati by an enterprising German, Mr. Henrichs, and then grown in the garden of Mr. Weidesprecher, attracted the attention of some of our grape growers, among others Mr. Jacob Rommel, by their entire exemption from mildew and rot, as also leaf blight. They grafted some of the scions on Catawba vines, and also tried propagation by cuttings, but found that the latter would not grow. Wine was made from the grapes, of course in very small quantities, and found good. The grape was attracting notice, and was favorably regarded by our wine growers, when an untoward occurrence ruined its prospects for some time.

Some of our wine growers had heard that Mr. Longworth, of Ohio, had cultivated this grape, and made wine from it. As he was then considered infallible authority on grapes and wine growing; they applied to him for information, and received an answer from him, in which he pronounced the grape wholly unworthy of culture, and that it was only fit to produce an inferior, sour wine; having none of the ingredients of a good wine grape. This was enough to most of our wine growers, and only a few cultivated it as a sort of forlorn hope.

But lo, and behold! Murder will out. The vines increased in size and fruitfulness; they were uniformly healthy; wine was made of the grapes again and again, which was pronounced good, even against the fiat of Mr. Longworth. The fame of the despised Norton's Virginia vindicated itself from year to year, slowly but steadily, until now the wine is pronounced the best red wine made in America; equal, if not superior, to the best Burgundy and Port wines of Europe.

The Herbemont was obtained from Cincinnati, in 1847, by Mr. Charles Tuebner, under the name of Lenoir. The high excellence of the fruit attracted early attention, but the impression in its favor was somewhat counteracted by its tendency to be winter killed, especially in rich soils. It has, however, steadily worked its way into general favor by its great productiveness, excellence of fruit, and good quality of the wine made from it, and now holds its rank as one of the indispensables on our grape list.

The Concord was introduced by me, in 1856, when I obtained a scion of Mr. James Souldard, of Galena, Ill. It was grafted on a Catawba vine, and produced fruit the second season, which attracted my attention at once by its excellent quality and its entire exemption from mildew and rot, although laying on the ground. The vine also proved so healthy and hardy, that I thought it worthy of dissemination, and distributed the little wood I had of it among the wine growing members of our agricultural society for experiments. It was grown and fruited by them; its good qualities for table and market became apparent, and it rose into favor rapidly.

But our people are greedy. It is not enough for them that a grape is a good market fruit, but the question arose also—can it be used for wine? Dr. Grant, of Iona, with whom I conferred on the subject, contended that it would never make wine. It might make a drink, but not wine, which could be justly called such; this was his judgment. It seemed strange to me that a grape, so rich in saccharine matter as the Concord, should not make wine, and I resolved to make the experiment. In 1860, I made about a gallon, which, when it got clear, was pronounced excellent wine by all who tasted it; last year I made a small quantity again, which, although it was an unfavorable season, was pronounced good; and of this year's produce, you have an opportunity to judge from the samples before you; so that the Concord bids fair to become also a wine grape.

When, a few years ago, the grape mania commenced, which raged, and is

still raging to some extent through the country, I, with several others, resolved to try all the new varieties of any promise, and judge them from the results on our own soil. About one hundred varieties were thus collected, and tried with varied success. The first season of its bearing, the Delaware attracted great attention by its fruitfulness, seemingly healthy habit, and the excellent quality of its fruit, so that we were led to entertain the highest hopes of this variety, for which everybody seemed to claim the first place among American grapes. But I am sorry to say, it has not fulfilled its early promise; the two following seasons it has been badly affected by leaf blight, and seems to be too feeble and delicate in its habit to become a paying fruit here, compared with others.

Other varieties were tried with more or less success, but it would lead too far into details, to give the separate experience with each. All of them that deserve cultivation will be found in the list added here.

I have been thus explicit upon the history of these varieties, to show the difficulties under which grape culture has labored; to explain to those who may perhaps think it easy to start an entirely new branch of industry, the reasons why varieties of real worth are so long in coming before the public in their true light. It is easy to plant a grape and cultivate it extensively when everybody is convinced of its merits; but has great difficulties to first test a new grape, in a locality where it is entirely unknown, and get the community to acknowledge its merits. But we are a money making people, a matter of fact people; and the great question with us is always: Will it pay? When we come to grape growing, and ask Will it pay? I answer emphatically, Yes, it will pay, even with the Catawba. A vineyard of Catawba, of about five acres, under my care, has averaged me a clear profit of two hundred and thirty-three dollars per acre per year. But when we go a step further, and ask: Which variety pays best? we come to the great hitching point, to the cause of my opposition against the Catawba, the great grape of Ohio, the especial favorite of Mr. Longworth and many others.

I am fully convinced, and could bring plenty of witnesses to sustain me, that Norton's Virginia, under good cultivation, will produce 400 gallons of wine per acre as an average. This, at its present lowest market rates, would be worth two dollars per gallon, which will make an average yield of eight hundred dollars per acre. Deduct from this say one hundred dollars as cost of interest on capital and labor, and it leaves a clear profit of seven hundred dollars per year. The Herbemont, I am satisfied, will, with a little extra protection, produce at least as much. The Concord, cultivated for market, will pay at least a dollar per vine, which would be a return of at least one thousand dollars clear profit. Can you be surprised that I, knowing this, would rather plant them than the uncertain and fickle Catawba?

But some claim, that it is an old friend, and should not be easily discarded. I confess, that although I have a high respect for old age, the Catawba is too old an acquaintance of mine, and I know it too well to like it. It may do better in other localities, but for us in Missouri it will not do; as well might our farmers cling to the old plows, with wooden mould boards, with which I have plowed some twenty three years ago and discard the new and improved pattering; as well might they thresh their grain with the ancient flail, simply because their forefathers have used them, and they are old friends of theirs; as we should cling to growing the Catawba, simply because we know it longest. Progress is the watchword of the age; and we must move on, from good to better, and from better to best, if we do not wish to be left behind. I will here give a list of such varieties, for wine and table use, as I think worthy of general cultivation, and also of such as promises well.

FOR GENERAL CULTIVATION.

FOR WINE.—Norton's Virginia, Herbemont, Concord.

FOR TABLE AND MARKET.—Concord, Herbemont, Hartford Prolific, Blood's Black, Union Village, North Carolina Seedling or Mary Ann.

PROMISING WELL.

FOR WINE.—Cassady, Cunningham, Arkansas, Cynthiana or Red River, Clinton, Louisiana, Taylor's Bullitt, Miner's Seedling, North Carolina Seedling.

FOR TABLE AND MARKET.—Clara, Taylor's Bullitt, Miner's Seedling.

For preparation of ground for a vineyard, planting after treatment of the vines, wine making &c., I would refer to my treatise on the grape as published in the transactions of the Society for 1860.

I would only remark here, that I believe that there are thousands, nay millions, of acres in this State, which could be prepared for vines by simply clearing the land, and then plowing and sub-soiling to the depth of eighteen inches. I refer here to such lands where the sub-soil is not retentive of moisture. This would, of course, save a great deal of labor, compared to trenching with the spade.

I have spoken more of the experiments in grape growing around Hermann, because they have come under my immediate observation, not because I think the locality better adapted to grape growing than others. The experiments at Boonville, in Warren and St. Charles Counties, even in your own immediate neighborhood, show that there are locations just as good, and may be better than Gasconade County. But I prefer to speak of matters of which I know, at least, something, to those I know nothing about from personal observation.—There are millions of acres, no doubt, waiting for the hands of the industrious vintner to convert them into smiling vineyards; and the time I hope is not distant when the grape will be an every-day acquaintance, and its garlands of glorious fruit will cover the hut of even the poorest laborer in the land.

I have spoken of grape culture in its infancy, and so it is. But the child has learnt its first lesson the A. B. C. of the science, and it will be comparatively easy to master the whole task. And if the child, in its bib and tucker, gives such rich promise, what may we not expect from the full grown man. The future lays before us, rich in glorious promise; our fault it will be if it is not fulfilled.

I would here say a few words about wine—i.e. pure juice of the grape—as a moral agent to promote true temperance. It is a well known fact, that in those countries where wine is used as a common beverage among the people, the vice of drunkenness is comparatively but little known. Scripture tells us that wine gladdens the heart of man, and the reports from those countries—the wine growing districts of France, Germany, etc.—serve to show that the people there are, even when in poor circumstances, of a lively and cheerful disposition, and that drunkenness is of rare occurrence. Why should we not imitate their example. The laborer needs a stimulant; nature craves it, when exhausted; why should we not try and give him one, which is certainly the most innocent, as well as the most enlivening; light, pure wine; instead of the poisonous alcohol, and sluggish beer, which are now so frequent? We would certainly do more by such a course to promote the cause of true temperance, than by all the Maine liquor laws and restrictions which have been passed already, for it is a true though hackneyed proverb, that forbidden fruit is sweetest to the taste.

And here let me add my most solemn protest against calling all concoctions, made by adding water, sugar or brandy to the juice of fruits, wine. Every day we hear and see Blackberry, Raspberry, Strawberry, Currant, nay even Rhubarb and Parsnip wine. They may be very good, very palatable, everything else; but please excuse me from calling them wine. Wine is the pure, fermented juice of the grape, without any addition or mixture whatever, at least so I take it.

In conclusion, let me express the heartfelt wish, that the blessings of an honorable peace, may soon restore all our absent ones to their homes, to assist in the good work, so that Missouri may soon be called, what I sincerely believe it destined to be—The Vineyard of the West.

THE VAN MONS THEORY.

EXPERIMENTS IN ILLINOIS, ON APPLES.

Read before the Missouri State Horticultural Society, 1863.

BY DR. J. A. WARDER.

The following facts have been elicited from correspondence with H. P. Brayshaw, of DuQuoin, Illinois. The experiments were instituted by his father many years ago, to test the truth of the so-called Van Mons' theory of the improvement of fruits by using only the first seeds.

Mr. Brayshaw quotes from memory chiefly, having kept no record. Thirty-five years ago, in 1827, his father procured twenty-five seedling trees from a nursery, which may be supposed to have been an average lot, grown from promiscuous seed. These were planted, and when they came into bearing, six of them furnished fruit that might be called "good," and of these "four were considered "fine." One of the six is still in cultivation, and known as the Illinois Greening. Of the remainder of the trees, some of the fruits were fair, and the rest were worthless, and have disappeared.

Second Generation.—The first fruits of these trees were selected, and the seeds were sown. Of the resulting crop, some furnished fruit that was "good," but they do not appear to have merited much attention.

Third Generation.—From first seeds of the above one hundred trees were produced, some of which were good fruit, and some "even fine," while some were very poor, "four or five only merited attention." So that we see a retrogression from the random seedlings, which furnished 25 per cent. of good fruit, to four or five per cent., in the third generation, that were worthy of note.

Fourth Generation.—A crop of first seed was again sown, producing a fourth generation; of these many were "good culinary fruits," none, or "very few being of the poorest class of seedlings," none of them, however, were fine enough "for the dessert."

Fifth Generation.—This crop of seedlings was destroyed by the cut-worms, so that only one tree now remains, but has not yet fruited. But Mr. Brayshaw appears to feel hopeful of the results, and promises to continue the experiment.

Second crops have also been sown from some of these trees, but a smaller proportion of the seedlings thus produced were good fruits, than when the first seeds were used—this Mr. Brayshaw considers confirmatory evidence of the theory, though he appears to feel confidence in the varieties already in use, most of which have had almost an accidental origin.

He thinks the result would have been more successful had the blossoms been protected from impregnation by other trees, and recommends that those to be experimented with should be planted at a distance from orchards, so as to avoid this cross-breeding, and to allow of what is called breeding in-and-in.—If this were done he feels confident that "the seedlings would more nearly resemble the parent, and to a certain extent, would manifest the tendency to improvement, and that from the earliest ripened fruits, some earlier varieties would be produced, from those latest ripening, later varieties, from those that were inferior and insipid, poor sorts would spring, and that from the very best and most perfect fruits we might expect one in one thousand or one-tenth of one per cent. to be better than the parent. This diminishes our chances for improvement to a beautifully fine point upon which to hang our hopes of the result of many generations of seedlings occupying more than a lifetime of experiments.

Mr. Brayshaw, citing some of the generally adopted axioms of breeders of animals, assumes that crosses, as of distinct races, will not be so likely to produce good results, as a system of breeding in-and-in, persistently carried out. This plan he recommends, and alludes to the quince and mulberry as suitable species to operate upon, because in them there are fewer varieties, and therefore less liability to cross-breeding, and a better opportunity for breeding in-and-in. He also reminds us of the happy results which follow the careful selection of the best specimens in garden flowers and vegetables combined with

the rejection of all inferior plants, when we desire to improve the character of our garden products, and he adopts the views of certain physiologists, which however, are questioned by other authorities, to the effect that violent or decided crosses are always followed by depreciation and deterioration in the offspring.

The whole communication referring to these experiments, which are almost the only ones, so far as I know, which have been conducted in this country to any extent to verify or controvert the Van Mons' theory, is very interesting, but it is easy to perceive that the writer though apparently very fair, and entirely honest, has been fully imbued with the truth and correctness of the proposition of Van Mons, that the first ripened seed of a natural plant was more likely to produce an improved variety, and that this tendency to improvement would ever increase and be most prominent in the first ripened seeds of successive generations grown from it.

The theory of Van Mons I shall not attempt in this place to controvert, but will simply say that nothing which has yet come under my observation has had a tendency to make me a convert to the avowed views of the great Belgian Pomologist, while, on the contrary, the rumors of his opponents, that he was really attempting to produce crosses from some of the best fruits, as our gardeners have most successfully done in numerous instances, in the beautiful flowers and delicious vegetables of modern horticulture, have always impressed me with a color of probability, and if he were not actually and intentionally impregnating the blossoms with pollen of the better varieties, natural causes, such as the moving currents of air, and the ever active insects, whose special function in many instances appears to be the conveyance of pollen, would necessarily cause an admixture, which, in a promiscuous collection, like the "school of Van Mons," would at least have an equal chance of producing an improvement in some of the resulting seeds.

The whole subject of variation in species, the existence of varieties, and also of sports, which may perhaps be considered as still more temporary variations from the originals, than those which come through the seeds, is one of deep interest, well worthy of our study, but concerning which we must confess ourselves as yet quite ignorant, and our best botanists do not agree even as to the specific distinctions that have been set up as characters of some of our familiar plants; the most eminent authors differing with regard to the species of some of our most familiar genera of trees and plants.

LIST OF MEMBERS

OF THE

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The names and P. O. address of persons participating in the discussions of the session of 1883:

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 BAYLES, JAS. A., Carondelet, St. Louis Co., Mo.
 BEEHLER, GEO. M., Indianapolis, Ind.
 BEALE, DR. J. B. H., Eureka, St. Louis Co., Mo.
 BOOTE, GEO., Alton, Madison Co., Ill.
 BRAGDON, C. D., (Rural New Yorker,) Chicago, Ill.
 COLMAN, NORMAN J., "Valley Farmer," St. Louis, Mo.
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 COZZENS, WM. F., St. Louis, Mo.
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 HOPPER, J. V., Bunker Hill, Macoupin Co., Ill.
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